

Adapting to Climate Change:
A Sensitivity Analysis of National Adaptation Programmes of Action Towards Women

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ABSTRACT

The most recent decision of the 2012 Conference of the Parties (CoP) to the United Nations Framework Convention on Climate Change (UNFCCC) recognizes that in order to create climate policies that respond to the different needs of men and women a more balanced representation of women from developed and developing countries is needed. National Adaptation Programmes of Action (NAPAs) provide a process for Least Developed Countries (LDCs) to “identify priority activities that respond to their *urgent* and *immediate* needs to respond to impending threats from climate change.” Since 1997, the United Nations has agreed to gender mainstreaming- a globally accepted strategy for promoting gender equality by ensuring that gender perspectives and attention to the goal of gender equality are central to all activities in the all UN systems.

Due to the gender division of labor climate change will affect men and women differently. Policies and programs that do not take into account the needs and capacities of both men and women will fail to be effective and may worsen preexisting conditions that historically favor men. My research investigates the UN’s commitment towards gender mainstreaming. More specifically my objective is to understand how and to what extent the NAPAs from 49 countries integrate a gender dimension into their national climate adaptation policy. For the purpose of this research, I consider three interrelated issues: whether gender-specific needs and vulnerabilities were identified by the NAPA; if these needs and vulnerabilities were addressed by proposed adaptation projects; and in what forms women participated in the formulation of the NAPA. The scope of this research begins with an overview assessment of 49 NAPAs followed by a comparative

assessment of NAPAs from four countries- Afghanistan, Bangladesh, Maldives, and Niger, and an in-depth analysis of Nepal's NAPA, which incorporates field study. Nepal was chosen as a focus country due to its identification as being both inclusive and gender sensitive.

The method of inquiry consists of both quantitative and qualitative analysis, utilizing the quantitative measures of HDI and GII and the qualitative methods of content analysis and case study. The findings suggest that the response to the gender dimensions of climate change found in adaptation policies vary widely among the LDCs and the level of response is dependent upon social, cultural, economic, and political contexts within each LDC. Additionally, I find that gender mainstreaming techniques have not been fully integrated into the NAPA policy and processes, and have not been effective at promoting gender equality through adaptation strategies. Recommendations are provided in order to help mainstream gender in NAPAs as they continue to be developed, revised, and implemented.

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LIST OF ACRONYMS

AFR	Adolescent Fertility Rate
CBAP	Community Based Adaptation Planning
CEB	Chief Executives Board for Coordination
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COP	Conference of the Parties
ECOSOC	Economic and Social Council
GAD	Gender and Development
GII	Gender Inequality Index
HDI	Human Development Index
IPCC	Intergovernmental Panel on Climate Change
LAPA	Local Adaptation Plans of Action
LDC	Least Developed Country
LDCF	Least Developed Country Fund
LEG	LDC Expert Group
LFPR	Labor Force Participation Rate
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MSL	Mean Sea Level
MTL	Mean Tide Level
NAPA	National Adaptation Programs of Action

NDRA	Natural Disaster (Relief) Act
OCHA	Office for the Coordination of Humanitarian Affairs
SNP	Seats at National Parliament
SST	Sea Surface Temperature
UN	United Nations
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
WID	Women in Development

CHAPTER 1

INTRODUCTION

I. Statement of the problem

Since 1997, The United Nations (UN) has been formally committed to gender mainstreaming in all policies and programs as a means to achieve the goal of gender equality. Mainstreaming involves ensuring that gender perspectives and attention to the goal of gender equality are central to all activities, including policy development, research, advocacy/dialogue, legislation, resource allocation, and planning, implementation and monitoring of programs and projects (UN Gender Mainstreaming, 2002). Therefore, policy responses to climate change, mandated by the UN for Least Developed Countries (LDCs) must follow guidelines as stated in the UN's mainstreaming guidelines, outlined in E/1997/66 titled "Mainstreaming the Gender Perspective Into All Policies and Programs in the United Nations System" (E/1997/66). Additionally, climate response measures should include this strategic approach to achieve the goal of gender equality. Adaptation to climate change is a means to reduce vulnerabilities to the impacts of climate change, and adaptation policies and strategies have the unique opportunity to reduce vulnerabilities for both men and women, while also bridging the traditional gender gap, inequalities, and male bias in decision-making processes (Mainlay & Tan, 2012).

This dissertation will explore the National Adaptation Programs of Action (NAPAs) from 49 LDCs to identify a) how these countries have addressed gender bias within their NAPAs; b) how NAPAs compare in their gender inclusions, and c) what national indicators there are that demonstrate the gender sensitivity of the country in

question. As a case study and to gain an in-depth understanding of gender sensitivity, I study Nepal to explore the social and cultural contexts that may exert influence on the ability of NAPA to address gendered vulnerabilities to climate impacts. NAPAs are climate adaptation policy documents that incorporate preexisting climate change data with vulnerabilities faced by the country and present priority projects that respond to the urgent and immediate needs to adapt to climate change. NAPAs are mandated by the United Nations Framework Convention on Climate Change (UNFCCC) and provide a process for LDCs to “identify priority activities that respond to their *urgent* and *immediate* needs to adapt to climate change, those for which further delay would increase vulnerabilities and/or costs at a later stage.” NAPAs are written by each country following guidelines and support from the UN, and are submitted to the UNFCCC Secretariat and publically available on the UNFCCC NAPA website. The NAPAs are subject to the UN’s commitment that all policies and programs must follow gender mainstreaming guidelines to achieve the goal of gender equality (UN Gender Mainstreaming, 2002). This dissertation provides a greater understanding of how the UN’s call for gender mainstreaming is included, both within the documents and in the policy development process.

The rationale for NAPAs rests on the limited ability of the LDCs to adapt to the adverse effects of climate change. According to the UN, they are action-oriented, country-driven, flexible policy documents that are guided by local circumstances. NAPAs are to be presented in a simple format, which is easily understood both by decision-makers and the public. As of November 2013, 49 NAPAs have been completed

and submitted to the UNFCCC Secretariat. NAPA guidelines suggest six sections for the structure of the NAPA document: 1) introduction and setting; 2) framework for adaptation programs; 3) identification of key adaptation needs; 4) criteria for selecting priority activities; 5) list of priority activities; and 6) the NAPA preparation process. The NAPAs are written within each country, and the leading authors for each NAPA are all ministries, agencies, or councils for environmental protection. Most are titled Ministry of Environment, while some others are Environmental Protection Agencies, Ministry of Environment and Agriculture, Forests, Natural Resources and/or Physical Developments (see Appendix A for a full list). There is quite a variation in NAPAs, both in scope and coverage. Briefly, the shortest NAPA is 25 pages (Liberia) and the longest is 136 pages (Solomon Islands). Ten of the NAPAs are 100 pages or more and six NAPAs are less than 50 pages.

The main content of each NAPA document is a list of ranked priority adaptation activities/projects, as well as short profiles of each activity. These projects are also designed to support the country's development activities and the NAPA priority sectors, which include: agriculture and food security; water resources; coastal zones; early warning and disaster management. As noted in the UNFCCC NAPA web page, most LDCs are currently in the process of implementing their NAPAs.

In addition to the literature review (Chapter Two) and methods (Chapter Three), this dissertation has three other chapters, each analyzing gender sensitivities with different levels of specificity- scale, sensitivity, and process. Through content analysis, Chapter Four takes a broad look at all 49 NAPAs submitted to the UNFCCC and assesses

how women's concerns are typically addressed in the NAPAs. It also provides a broader landscape of the NAPA. Chapter Five narrows the study to four countries: Afghanistan, Bangladesh, Maldives, and Niger. The purpose here is to understand how country-specific social, cultural, and political dimensions influence the gender sensitivity of NAPA. This is achieved through the assessment of the Gender Inequality Index (GII) as an indicator of gender sensitivity in the NAPA. Focusing further in scale, through an in-depth case study, Chapter Six seeks to understand the decision making process employed in the NAPA. This chapter takes a closer look at NAPA implemented projects and NGO contributions to reducing women's vulnerabilities. These chapters provide the resources necessary to look at NAPAs from a gendered perspective, with the intention to highlight areas in the decision-making process that hinder advancement towards gender equality.

As climate change continues to pose serious threats to rural communities in developing countries, funding from INGOs will most likely increase. By mainstreaming gender into climate change policies, the funding will serve multiple purposes and could provide the most benefit per dollar. According to the interviews I conducted with decision-makers in Nepal, approximately 80 percent of the international funding that comes to the country is used in the bureaucracy, with general consensus that this is an inappropriate use of funds and that more money should be used directly to implement policies. By building policies that are effective, multi-purpose, and streamlined, I suggest that bureaucracy spending can be reduced and the money that is actually used to implement projects in the NAPA will be used in the most effective ways.

II. Mainstreaming Gender into Climate Adaptations Strategies

Not only is it imperative that gender issues are addressed to reduce inequalities and vulnerabilities to climate change, mainstreaming gender into NAPAs is required by all UN initiatives (Skutsch, 2002; UN Women, 2012). Mainstreaming has been identified as the global strategy for promoting gender equality through the Platform for Action at the United Nations Fourth World Conference on Women in Beijing in September 1995. It states that,

In addressing the inequality between men and women in the sharing of power and decision-making at all levels, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes so that before decisions are taken, an analysis is made of the effects on women and men, respectively (Paragraph 189, UNFWC, 1995).

The UN has accepted the strategy of mainstreaming in the United Nations Economic and Social Council (ECOSOC) as:

The process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality (Mandates ECOSOC 1997/2).

Established in 1946, ECOSOC is a founding body of the UN Chapter and is responsible for 70 percent of the human and financial resources of the entire UN system. It focuses on the world's economic, social, and environmental challenges and it provides a place where issues are discussed and debated, and policy recommendations are issued. Given the significance of ECOSOC and the financial resources it commits to UN systems, its definition of gender mainstreaming has a strong implication for all UN policies.

Following the Platform for Action in 1995, the UN Secretary General was called on to take further steps in mainstreaming a gender perspective in the policies and decisions of the organization at the 2005 World Summit (General Assembly resolution 60/1, paragraph 166). In response, a system-wide policy on gender equality and the empowerment of women, and a strategy on gender mainstreaming were developed within the framework. The policy and strategy were discussed and supported by the high-level committees on Programme and Management of the Chief Executives Board for Coordination (CEB) and endorsed by the Board in December of 2006.

(CEB/2006/2) provides details on the UN system-wide policy on gender equality and the empowerment of women, with primary focus on results and impacts. The policy statement states that,

We state our intention and commitment to continue to pursue the goals of gender equality and the empowerment of women, both collectively within the United Nations system and individually within our specific organizations, through coherent and coordinated implementation of the gender mainstreaming strategy adopted by the Economic and Social Council in its agreed conclusions 1997/2. We commit ourselves to providing strong leadership within our organizations to ensure that a gender perspective is reflected in all our organizational practices, policies and programmes (CEB/2006/2).

Additionally, the strategy states that gender mainstreaming, as a key strategy for achieving gender equality and the empowerment of women, is intended to work in conjunction with women-specific issues. It should not be seen as replacing them, but rather as supplementing and enhancing their effectiveness. Additionally, while mainstreaming is clearly essential for securing human rights and social justice for women as well as for men, it also increasingly recognizes that incorporating gender perspectives

in different areas of development ensures the effective achievement of other social and economic goals (UN Gender Mainstreaming, 2002).

The strategy for mainstreaming is implemented in different ways in relation to activities such as research, policy development, policy analysis, program delivery, or technical assistance activities (UN Gender Mainstreaming, 2002). Since NAPAs incorporate technical assistance activities, and an important challenge and opportunity in technical assistance activities is to identify how gender dimensions are relevant and then establish a constructive dialogue with potential partners on gender equality issues, mainstreaming requires that a research project is defined in a way that ensures that conceptual frameworks and methodologies will capture the different and unequal situations of women and men. Additionally, the mainstreaming strategy must be adapted to the particular subject under discussion, and the analytic approach and questions asked must be appropriate for the specific concerns being addressed. While there is no set formula that can be applied in every context, common to mainstreaming in all sectors of development issues is that a concern for gender equality is brought in the ‘mainstream’ of activities rather than dealt with as an ‘add-on’ (UN Gender Mainstreaming, 2002).

From “Gender Mainstreaming: An Overview,” written by the UN Office of the Special Adviser on Gender Issues and Advancement of Women, the first steps in the mainstreaming strategy are the “assessment of how and why gender differences and inequalities are relevant to the subject under discussion, identifying where there are opportunities to narrow these inequalities and deciding on the approach to be taken” (UN Gender Mainstreaming, 2002, p. 2). Although the specific questions and approach will

differ with the subject under discussion, several general starting points are identified. The document states that it is important to:

- a) Ask questions about the responsibilities, activities, interest and priorities of women and men, and how their experience of problems may differ;
- b) Question assumptions about “families,” “households” or “people” that may be implicit in the way a problem is posed or a policy is formulated;
- c) Obtain the data or information to allow the experiences and situations of both women and men to be analyzed;
- d) Seek the inputs and views of women as well as men about decisions that will affect the way they live;
- e) Ensure that activities where women are numerically dominant (including domestic work) receive attention;
- f) Avoid assuming that all women or all men share the same needs and perspectives;
- g) Analyze the problem or issue and proposed policy options for implications from a gender perspective and seek to identify means of formulating directions that support an equitable distribution of benefits and opportunities (UN Gender Mainstreaming, 2002).

Gender is an issue because of the fundamental differences and inequalities between women and men, and these differences and inequalities may manifest themselves in different ways in specific countries or sectors but there are some broad patterns that point to questions that should always be considered. The following elements from the UN Gender Mainstreaming overview could be taken as starting points to explore how and why gender differences and inequalities are relevant in a specific situation:

- a) Inequalities in political power (access to decision-making, representation, etc.)
- b) Inequalities within households
- c) Differences in legal status and entitlements
- d) Gender division of labor within the economy
- e) Inequalities in the domestic/unpaid sector
- f) Violence against women
- g) Discriminatory attitudes (UN Gender Mainstreaming, 2002).

These elements provide reference points as I seek to understand whether and how gender has been mainstreamed into NAPA documents and decision-making processes.

They also provide the basis for observations that I made in analyzing the documents in regards to gender mainstreaming approaches and the successfulness of incorporating gender issues and reducing women's inequalities.

III. NAPAs and the UNFCCC

Until recently, adaptation, a process by which societies address the consequences of climate change, was a taboo subject in climate change discussions, where it was viewed as undermining efforts to reduce greenhouse gas emissions (Pielke et al., 2007). However, the realization that even in the best-case scenario, emissions reductions can have little effect on social vulnerability to climate impacts over the next several decades has prompted resurgence of interest in adaptation to climate change. Therefore, adaptation to climate change is transitioning from a phase of awareness to the creation of actual strategies and plans in societies (Minh Duc et al., 2014). As illustrated in Figure 1-1, adaptation has the ability to reduce social vulnerabilities despite mitigation efforts. For this reason, adaptation is an essential response to climate change, as mitigation efforts could have little effect on social vulnerability to climate impacts (Pielke et al., 2007).

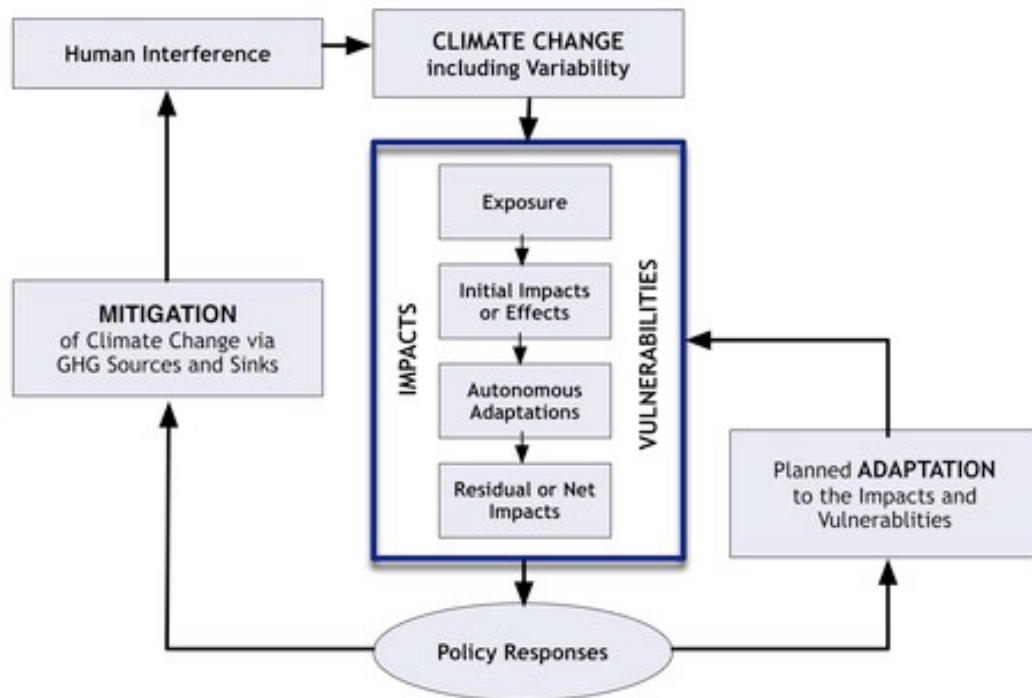


Figure 1-1: Mitigation and adaptation responses to climate change
 (Source: IPCC TAR (2001) WG2 from Smit et al., 1999).

While the framework (Figure 1-1) clearly illustrates that mitigation and adaptation are both essential responses to climate change, the emergence of adaptation as a policy response to climate change is a significant milestone. However, adaptation has also made a delayed appearance as an international policy response. For example, the UNFCCC entered into force in 1994, and the early years were devoted to negotiating the Kyoto Protocol, which has an explicit focus on mitigation. Following the adoption of the Kyoto Protocol in 1997, there was a delay in the negotiations that led to a longer time before finalization of the Protocol. The negotiations of the Kyoto Protocol were intended to be finalized at the Sixth Conference of the Parties (COP-6) in 2000, but due to failure in negotiations and high-level political dispute, it was not until COP-11 in 2005 that the set

of rules were adopted (Burton et al., 2009). During the in-between period of the Kyoto Protocols development and finalization, adaptation emerged as a policy option (Pilifosova, 2000) and was able to be included into the Marrakesh Accords of 2001 (Adger et al., 2003; Schipper, 2009).

The failure of negotiations and the ensuing political dispute around mitigation prompted the LDCs to develop a plan of action in response to climate change at COP-6 in 2000 (Schipper, 2009). The Marrakesh Accords (2001), theoretically, created an opportunity for adaptation to play a larger role since mitigation was likely to not be effective at subsiding all future climate changes. The formal commitment of the COP to adaptation is in Article 4.1 (b) of the UNFCCC which commits Parties to: “Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to facilitate adequate adaptation to climate change.” The financing of adaptation measures is addressed in Article 4.3, which states that:

The developed countries Parties and other developed Parties included in Annex II shall provide new and additional financial resources... needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article...

In brief, there are COP commitments to climate change adaptation. Progression of these commitments has laid the groundwork for NAPAs (more detail of the funding arrangements can be found in Klein, 2002). The NAPAs implement Article 4.9 of the UNFCCC, in which the COP established the LDC work program in 2001 (Klein & Persson, 2008). The work program addresses the LDCs insufficient means to deal with problems associated with climate change on their own. Decision 5/CP.7 of the COP-7 establishes the LDC work program which includes these functions (among others):

strengthening existing national climate change secretariats, providing training in negotiating skills and language to develop the capacity of negotiations from the LDCs to participate effectively in the climate change process, supporting the preparation of the NAPAs, and promotion of public awareness programs to ensure the dissemination of information on climate change issues. Included in the list of the LDC work program functions is support of the NAPAs, which more specifically aims to support LDCs in addressing the challenge of climate change given their particular vulnerability. The COP also established a Least Developed Countries Fund (LDCF) to support the preparation and implementation of NAPAs and an LDC Expert Group to provide technical support and advice to the LDCs.

As NAPAs are at the forefront of adaptation strategies for developing countries, it is imperative that they meet the needs of those most vulnerable to climate change. According to the UNFCCC, the rationale for developing NAPAs is based on the high level of vulnerability and the low adaptive capacity of the LDCs (OCHA, 2009). Climate change studies indicate that there are geographic differences in the impacts of climate change and that many of the areas with the greatest threat are located in developing countries (Scherler et al., 2011; Sorte et al., 2011). Within these countries, the poorest are the most vulnerable to climate change (Kates, 2009). Vulnerability is defined as the propensity or predisposition to be adversely affected by climate risks (Field et al., 2012) and emerges from the intersection of different inequalities and uneven power structures, and is therefore, typically socially-differentiated (Field et al., 2012). Vulnerability is often high among indigenous populations, women, children, elderly, and disabled people

(Eriksen & O'Brien, 2007). Vulnerability of individuals is determined by the availability of resources and by the entitlements of individuals and groups to call on these resources (Adger et al., 2003). Typically, the poor have the least access to resources and lack the means to acquire them (Adger et al., 2003). The IPCC concludes that poor communities are especially vulnerable to climate change, and the poor are more heavily impacted as they have less access to local water and food supplies (Agarwal et al., 2014; Birkmann et al., 2014; IPCC, 2007). Theories of vulnerability will be discussed more in the following chapter.

IV. Synthesis

To date, little research has assessed gender equality within NAPA documents (Holvoet & Inberg, 2013; OCHA, 2009). There is an immediate need for this research to be conducted and disseminated, as NAPA documents are currently being developed (the most recent being submitted to the UNFCCC Secretariat in November 2013), in some cases being revised (Bangladesh provided an updated NAPA in June 2009, with their original submitted November 2005), and implemented. NAPAs are designed to address the most immediate and urgent needs to adapt to climate change and evidence suggests that women will be the most affected by these changes (Nelson et al., 2002). Therefore, it is imperative that decision-makers have current information about the effects of including women within NAPA projects and ways to mainstream gender within the documents and the development process. This dissertation fills an immediate need for empirical research concerning the techniques of gender mainstreaming and how NAPAs can seek to reduce women's inequalities while preparing them to adapt to climate change. When NAPAs fail

to mainstream gender and reduce inequalities alongside adaptation strategies, decision-makers are missing an opportunity to improve the overall status of women in the country, and hinder the country's ability to successfully prepare and adapt to current and projected climate changes.

This research is necessary in order for NAPA documents to improve adaptation to climate change. As the world's poorest women have been identified as the most vulnerable population to climate change, it is necessary that NAPA documents address their specific vulnerabilities. This research will be the first to assess the gender approach that the UNFCCC has proposed for the NAPAs, as well as to assess the ability of the NAPA documents to address gender inequalities. Additionally, this research will provide decision-makers with guidelines to address gender inequalities that are specific to each step of the NAPA development process. While this dissertation carefully considers theories of gender inequality, vulnerability, and adaptation, it provides an analysis of successes and failures of the NAPAs and their decision-making processes that incorporate women's needs to adapting to climate change.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

I. Introduction

The literature on climate change impacts, adaptation, and vulnerability has doubled since 2005 (Bindi et al, 2014). As climate change is expected to bring an increase in the frequency, intensity, spatial extent, and duration of climate and weather extremes (Lavell et al., 2012; Wagner et al., 2014), it has become apparent that adaptation strategies are needed in anticipation of such events. Given that climate change is expected to have dramatic impacts on freshwater resources (Arnell et al., 2014), terrestrial and inland water systems (Allen et al., 2014), coastal systems and low-lying areas (Gattuso et al., 2014), ocean systems (Boyd et al., 2014), and food security and food production systems (Challinor et al., 2014), the potential impacts of climate variability and change are cause for concern. Studies continue to reveal that climate change and climate variability worsen existing poverty and amplify inequalities (Agarwal et al., 2014). Climate change, as being a risk multiplier, is likely to exacerbate social challenges such as food security, water availability, public health and sustained economic growth, particularly for populations living in poverty.

Given that social, economic, political, and cultural dimensions are important parts of the calculus of vulnerability, in this dissertation I seek to understand these multidimensional inequalities and how they hinder the inclusion of marginalized communities, specifically women in decision making processes. I also provide background for understanding climate adaptation policies and the gender dimensions of

climate vulnerability. This chapter discusses the common thread across varied literature on adaptation, vulnerability, development, and feminism. Additionally, as this dissertation consists of a feminist policy analysis, political theories relevant to each body of literature will be discussed. I begin by focusing on adaptation, as this literature provides the appropriate background with which to understand the purpose of NAPAs.

II. Adaptation

Adaptation is an essential response to the impending threats brought about by changing climate (Smit et al, 2010). Adaptations, if designed appropriately, can ameliorate the negative consequences of climate change (Smit, 1993; Tol et al., 1997) and are considered an important policy option to respond to the threat posed by imminent climate change (Adger et al., 2005). While adaptation in itself is nothing new in human society, a brief history of climate adaptation is warranted in order to understand how adaptation has been conceptualized in the context of climate change. The genealogy of adaptation to climate change can be traced to the field of natural sciences, particularly population biology and evolutionary ecology (Winterhalder, 1980). Successful adaptation in these areas leads to the continued viability of species or ecosystems, but not necessarily the survival of individuals within a population (Slobodkin & Rappaport, 1974). Adaptation has also been applied in the social sciences, where ecological principles have been used in the context of human-environment interactions (Stern et al., 1992). An important distinction between adaptations in natural v. social sciences is that humans possess the ability to plan and manage adaptation (Smithers & Smit, 1997). For this reasons, responses of biological systems to disturbances are entirely reactive, while

human systems can anticipate, react, and plan. The social science applications of adaptation are evident in many scholarly fields, including human and cultural ecology, natural hazards research, ecological anthropology, cultural geography, human-environment geography and more recently, climate impact research (Chhetri & Easterling, 2010; Smithers & Smit, 1997). Not surprisingly, there are distinct interpretations of the concept of adaptation.

As shown in Table 2-1, climate adaptation has been understood and defined in a number of ways. Kelly and Adger (2000) define “adaptation in terms of the ability or inability of individuals and social groups to respond to, in the sense of cope with, recover from or adapt to, any external stress placed on their livelihoods and well-being” (p. 328). The newest version of the IPCC’s definition of adaptation is important, as it distinguishes between human systems and natural systems. Unlike others, these two definitions focus on the human dimensions of vulnerability. Additionally, they are about “identifying robust, policy-relevant recommendations” (Kelly & Adger, 2000, p. 329). In this dissertation, I consider adaptation as the ability of individuals or social groups to respond to and/or cope with external stress placed on their livelihoods and well-being from climate change, focusing on vulnerabilities that can be reduced through appropriate policy tools given to short-term and long-term climate change.

<i>Source</i>	<i>Definition</i>
Burton et al. (1998)	Refers to all those responses to climate change that may be used to reduce vulnerability.
Burton (1992)	Adaptation to climate is the process through which people reduce the adverse effects of climate on their health and well-being and take advantage of the opportunities that their climate environment provides.
Fussel and Klein (2002)	All changes in a system, compared to a reference case, that reduce the adverse effects of climate change.
IPCC (2001)	Adjustment in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. This term refers to changes in processes, practices, or structures to moderate or offset potential damages or to take advantage of opportunities associated with changes in climate. It involves adjustments to reduce the vulnerability of communities, regions, or activities to climate change and variability.
IPCC (2014)	The process of adjustment to actual or expected climate and its effects. In human systems adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.
Kelly and Adger (2000)	Ability or inability of individuals and social groups to respond to, in the sense of cope with, recover from or adapt to, any external stress placed on their livelihoods and well-being.
Pielke (1998)	Refers to adjustments in individual, group, and institutional behavior in order to reduce society's vulnerabilities to climate.
Smit (1993)	Adaptive actions are those responses or actions taken to enhance resilience of vulnerable systems, thereby reducing damages to human and natural systems from climate change and variability.
Stakhiv (1993)	Means any adjustment, whether passive, reactive or anticipatory, that is proposed as a means for ameliorating the anticipated adverse consequences associated with climate change.

Table 2-1: Summary of adaptation definitions (Source: Adapted from Schipper, 2007).

Figure 2-1 shows how adaptation policies vary in response to changes in goals and require time and effort. The figure depicts three levels of adaptation: *coping measures*, which are short term responses to deal with projected climate change impacts, *more substantial adjustments*, which incorporate changes in some aspects of the system without complete transformations, and *systems transformations*, which include paradigm shifts for long term solutions. Each level of adaptation requires varying effort, with

paradigm shifts being the most time consuming and challenging. For example, when an incremental response to climate change is insufficient due to the pace of change itself, a transformative adaptation may be necessary (Rickards & Howden, 2012). Additionally, it is important to understand these different levels of adaptation and understand that progress in one level can impact progress in the others.

According to Smithers and Smit (2010), the first step in creating strategies to adapt involves understanding the process of climate change, the magnitude and characteristics of its impacts, and possible response strategies. Moser and Ekstrom (2010) argue that there may not be a perfect scale or scope of adaptation, but they note that successes in the short-term goals may hinder progress toward long term solutions by being too short-sighted and using too many resources on short term solutions (Moser & Ekstrom, 2010). Additionally, by developing policies at all scales (international, national, regional, and local), a multidimensional approach to adaptation can be successful.

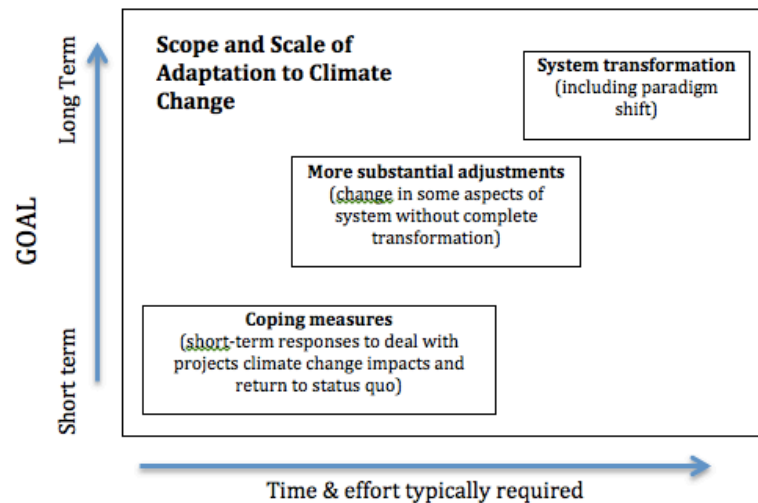


Figure 2-1: Scope and scale of adaptation to climate change
(Source: Adapted from Moser & Ekstrom, 2010)

A. Understanding Scale in Adaptation Strategies

Governments at all levels play important roles in advancing adaptive capacity and resilience of diverse stakeholder groups (Noble et al., 2014). National governments are integral as they decide many of the funding priorities and tradeoffs, develop regulations, promote institutional structures, and provide policy direction to district, state, and local governments (Noble et al., 2014). In LDCs, national governments are usually the contact point and initial recipient of international adaptation funding (Noble et al., 2014), therefore coordination among levels of government can allow for funding to flow more smoothly to local implementers for projects that correlate to national strategies.

Governments have the potential to directly reduce the risk and enhance the adaptive capacity of vulnerable areas and populations by developing and implementing locally appropriate regulations and attending to the needs of vulnerable populations through measures such as basic service provision and promotion of equitable policies and plans (Adger et al., 2003; Noble et al., 2014; Nelson et al., 2007). While governments have the potential to influence adaptive capacity, local governments often lack the human and technological capacity or mandate to develop and enforce regulations (Noble et al., 2014). Adaptation will require an approach that devolves relevant decision-making to the levels where the knowledge and capacity for effective adaptation resides (Noble et al., 2014).

While adaptive capacity differs between social, cultural, and economic statuses, the scale of addressing adaptive capacity has important policy components. Addressing adaptive capacity through different scales would most likely present the best approach, as

national, regional, and local policies may have different approaches to building adaptive capacity (Duc et al., 2014). Brooks et al., (2004) suggest that addressing adaptive capacity at the national level is appropriate because governments can centralize country specific information to determine policy and disseminate national strategies.

Additionally, comparing vulnerability and adaptive capacity across countries can identify leverage points in reducing vulnerability to climate change (Brooks et al., 2004). Brooks et al. (2004) also argues that sub-national and social differentiation of vulnerabilities and the ways in which the impacts of national-scale processes are mediated by location conditions and should not be overlooked (Brooks et al., 2004). A study by Vincent (2006) takes a two-pronged approach to adaptive capacity, utilizing a national index for cross-country comparison and a household index for cross-household comparison (Vincent, 2006). Vincent argues that understanding decisions made at both scales illustrates the degree of uncertainty involved when assessing adaptive capacity, and that this uncertainty is compounded when additional scales are included (Vincent, 2006). By centralizing adaptation strategies at the national level, country specific vulnerabilities and guidelines can be disseminated to regional and local governments, so that strategies across scales can be synchronized.

B. Adaptation as an Action through Planning

Following Burton et al. (2002), climate adaptation is referred to as actions taken by society through policy, legislation, regulations and incentives to reduce vulnerability to climate change. The process of building adaptation policy can vary greatly between developed and developing countries and according to scale, as discussed above.

According to Regmi and Subedi (2010) three notable adaptation plans (for developing countries) include: National Adaptation Programmes of Action (NAPAs), Local Adaptation Plan of Actions (LAPAs) and Community Based Adaptation Planning (CBAP), which is also referred to as Community Adaptation Plan of Action (CAPA). With information coming from the UN to guide the development of national adaptation policy documents (Reid et al., 2009), NAPAs resemble more of a top-down approach, enabling “communities to understand the uncertainty of future climatic conditions and engage effectively in a process of developing adaptation programmes” (Regmi & Subedi, 2010, p.5). LAPAs tend to employ a bottom-up approach. CBAP/CAPA bears significant similarities to LAPAs, except that they allow space for more community involvement.

Figure 2-2 shows a framework that includes both top-down approaches and bottom-up approaches to adaptation policy. Dessai and Hulme (2004) argue that the two approaches are complementary in terms of informing policy, and that when used together provide the best approach to climate adaptation policy. While they may be complementary, each approach demands different climate information and engages different sets of actors, which increases the likelihood of understanding social vulnerabilities more thoroughly and for communities with different vulnerabilities.

According to Regmi and Subedi (2010), good adaptation encompasses an essential part of normal risk management, and projects should seek to make changes in the long-term, while also providing short-term solutions. As illustrated in Figure 2-1, adaptation ranges from short-term coping strategies to transformational shifts (Moser & Ekstrom, 2010; Rickards & Howden, 2012). It is optimal for changes to happen at all

three levels identified by Moser and Ekstrom (2010), so that vulnerabilities can be reduced immediately and with lasting effects. Understanding the importance of scope and scale in developing adaptation strategies will help to ensure that adaptation is successful in helping those who are most in need and ensuring that strategies make significant changes to the system (Moser & Ekstrom, 2010).

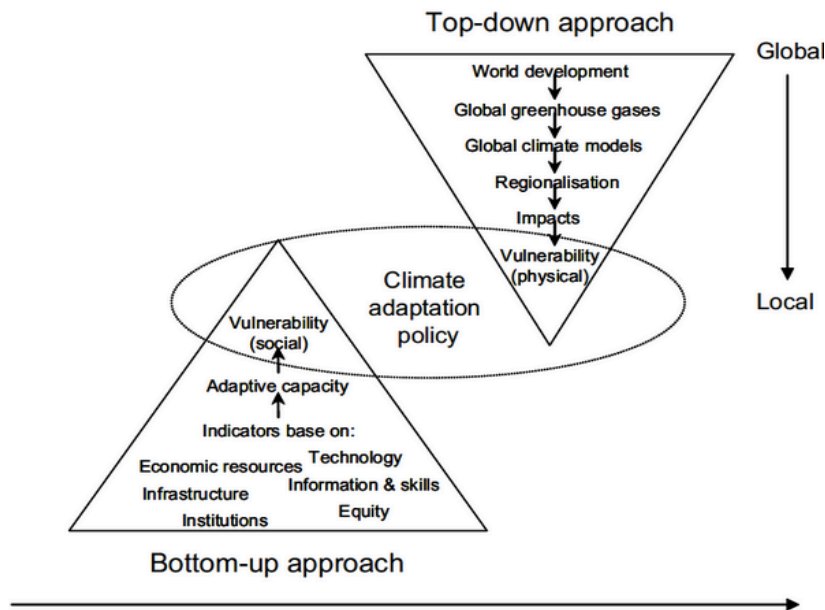


Figure 2-2: “Top-down” and “bottom-up” approaches used to inform climate adaptation policy (Source: Dessai, S., & Hulme, M., 2004).

The adaptation literature provides a background in which to analyze the NAPAs. From the literature, I am able to assess the policy in terms of its appropriate scope and scale, as well as if the policy provides the tools to help the most marginalized communities to adapt. The adaptation literature focuses heavily on what adaptation policies should encompass and what type of approaches provide the best tools for addressing adaptation and the decision-making processes used to build adaptation policies. Using the adaptation literature in my framework provides the background for a

strong policy discussion. As national policies (like NAPAs) are leading drivers of social change in LDCs, these policies provide the best means to spread information and drive change. Therefore, having policies that aid in adaptation are essential and the adaptation literature guides my analysis of adaptation strategies in the NAPAs. Vulnerability, adaptive capacity, and feminist literatures will be discussed in the following sections and add to the framework of my research.

III. Vulnerability

Vulnerability is a key concept in the scholarship on climate adaptation and it is almost impossible to discuss adaptation without having a clear understanding of vulnerability and how it is analyzed. Vulnerability is defined by the IPCC (2012) as the propensity or predisposition to be adversely affected by climate change. The concept of vulnerability refers to the fact that households, communities, societies, and particular groups of people have varying levels of exposure and risk to climate change (Adger, 2010; Ford & Berrang-Ford, 2011; Preston et al., 2011). Lambrou and Piana (2010) describe that the fundamental goal of adaptation is to reduce the vulnerabilities to climate-induced threats to society and enhance the livelihoods of poor people; therefore, decision-makers must understand vulnerabilities so that adaptation strategies can be applied. As vulnerabilities vary among individuals, it is essential to include vulnerabilities faced by already marginalized people.

Exposure and vulnerability are dynamic, vary across temporal and spatial scales, and depend on economic, social, geographic, demographic, cultural, institutional, governance, and environmental factors (IPCC, 2012, Turner et al., 2003). Individuals and

communities are differentially exposed and vulnerable depending on inequalities expressed through levels of wealth and education, disability, and health status, as well as gender, age, class, and other social and cultural characteristics (IPCC, 2012). For example, Davidson et al. (2003) argue that certain sociological characteristics of forest-based communities offer several reasons to believe that climate-related risks will have particularly significant impacts on the future wellbeing of families in these communities, not only climatically but also socially and politically (Davidson et al., 2003). These risks will be varied by gender, as forest-based occupations remain strongly male dominated, combined with the fact that there are few employment opportunities for women in rural communities (Davidson et al., 2003). Additional studies show empirical evidence of vulnerabilities differentiated by economic, social, and geographic scales (Adger et al., 2012; Field, 2012; Seidl et al., 2011).

Social, economic, and environmental sustainability can be enhanced by adaptation approaches. Sustainability in the context of climate change can address underlying causes of vulnerability, including the structural inequalities that create and sustain poverty and constrain access to resources. This involves integrating adaptation into all social, economic, and environmental policy domains (IPCC, 2012). The most effective adaptation actions are those that offer development benefits in relatively near terms, as well as reductions in vulnerability over the longer term. There are tradeoffs between current decisions and long-term goals linked to diverse values, interests, and priorities for the future. Short and long term perspectives on adaptation to climate change can thus be difficult to merge. Such integration involves overcoming the disconnect between local

risk management practices and national institutional and legal frameworks, policies, and planning (IPCC, 2012). Gender dimensions of vulnerability are not well integrated within frameworks, policies, and planning, which could, in turn, promote gender mainstreaming and reduce overall gender inequalities. This is discussed in Chapter Six with specific reference to Nepal's NAPA, LAPAs, and CAPAs.

According to Ribot (2009) there are two ways to analyze vulnerability: an impact analysis and a vulnerability analysis (see Figures 2-3 and 2-4).

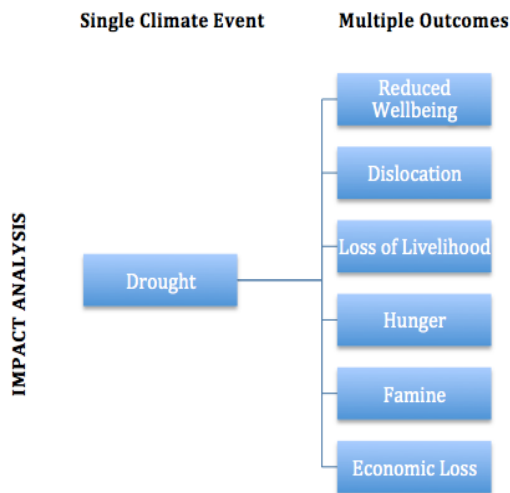


Figure 2-3: Impact analysis (Source: Ribot, Jesse C., 2009).

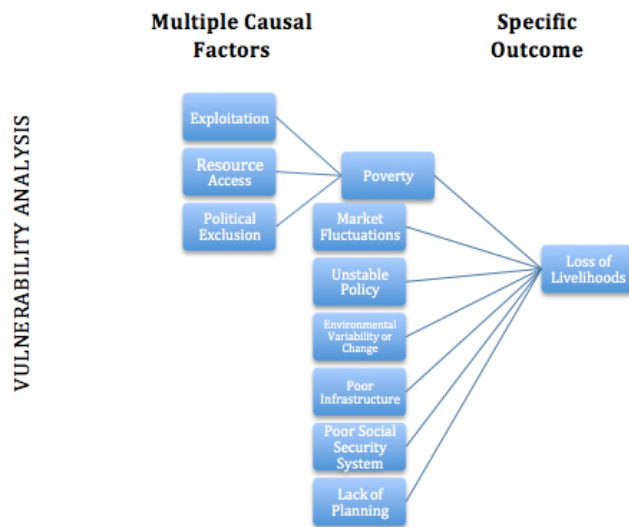


Figure 2-4: Vulnerability analysis (Source: Ribot, Jesse C., 2009).

The impact analysis shows that a single climate event will have multiple outcomes or impacts (Figure 2-3). The entitlements and livelihoods approach (vulnerability analysis) characterizes the multiple causes of single outcomes (Figure 2-4). This dissertation uses a merger of these two approaches (Figure 2-5), understanding that there is a flow between climate change events (or steady changes that happen over a prolonged period of time) which have multiple impacts, while social and cultural causal factors also shape the way people respond to and/or are impacted by climate change. In doing so, this dissertation offers a policy pathway to increase the robustness of adaptation in light of the threat posed by changing climate, while also addressing the country specific social and cultural issues that lead to increased vulnerability, specifically for women. In terms of vulnerability for decision-making, Ribot (2009) describes how vulnerability analysis may not motivate all decisions makers, but can give development professionals, activists, and affected populations a pathway to promote or seek rights and

protections. He also states that the vulnerability approach seeks to identify causes of vulnerabilities, which are most useful to policymakers as they can identify outcomes that are not desired and then can work backward to address the causal factors that create them. Vulnerability can be viewed as a tool used to build adaptation strategies to address the underlying causes of differentiated impacts.

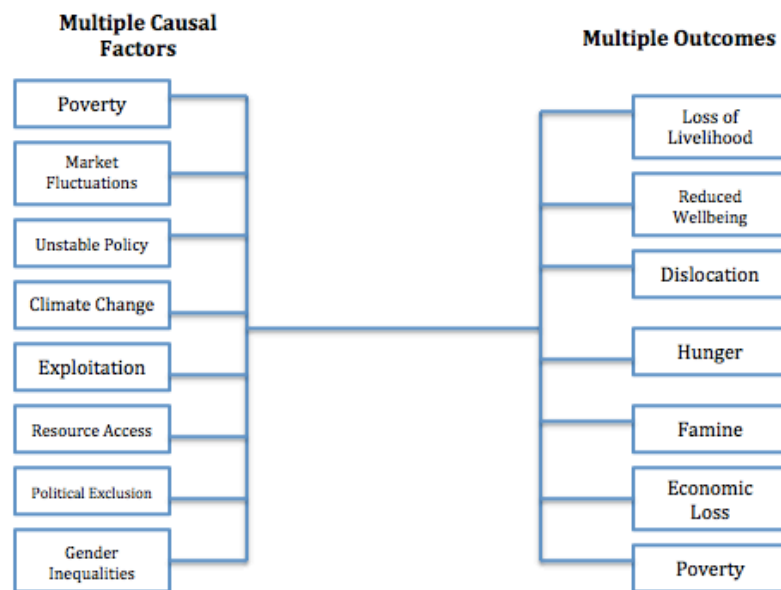


Figure 2-5: Multiple causal factors and multiple outcomes (Source: Adapted from Ribot, 2009).

Vulnerability is measured by indicators, which have evolved over time and by approach. Eriksen and Kelly (2006) discuss that in five past national-level studies, there are similarities in the descriptive measures of vulnerability (environmental and social conditions), but that the types of indicators and measures used have changed, as well as the identification of the most vulnerable countries. They suggest that the policy relevance of national-level indicators can be enhanced by focusing on the processes that shape

vulnerability and that a deeper understanding of the causes of vulnerability will aid in developing indicators that can more effectively influence policy development (Eriksen & Kelly, 2006). For an example of indicators used, Brooks, Adger and Kelly (2005) present a set of 11 indicators that they say exhibit a strong relationship between mortality associated with climate-related disasters. These indicators are: population with access to sanitation, literacy rate (15-24 year olds), maternal mortality, literacy rate (over 24 years), caloric intake, voice and accountability, civil liberties, political rights, government effectiveness, literacy ratio (female to male), and life expectancy at birth (p. 157). The identification of indicators for vulnerability can help answer where and how society can best invest in vulnerability reduction, which will ensure that adaptation strategies are useful and relevant. The indicators of vulnerabilities can be differentiated by gender in order to understand the vulnerabilities that women face to climate change, which can then be translated into NAPAs. Although indicators change over time, they provide information for policy-makers in order to make productive recommendations.

The vulnerability literature provides the base for understanding who is vulnerable, what they are vulnerable to, and how multiple causal factors influence their vulnerability, which leads to multiple and varied outcomes. The literature fails to incorporate the gender dimensions of vulnerability, with very little discussion of the fact that women face different vulnerabilities than men, and no discussion of how to incorporate such differences into policy. The following section discusses adaptive capacity as it relates to building effective adaptation strategies and policies.

IV. Adaptive Capacity

Vulnerability does not exist in isolation from the wider political economy, and as vulnerability is a relative lack of adaptive capacity, it is apparent that some households and communities are more vulnerable than others in the face of current climate variability and future climate change. Most definitions of vulnerability draw attention to multiple factors that influence adaptive capacity, such as livelihood, class, race, ethnicity, gender, and poverty. As this view of vulnerability relies heavily on the concept of adaptive capacity, the following paragraphs will define the concept of adaptive capacity used in this dissertation.

Following Smit and Pilifosova (2001), adaptive capacity is the potential capability or ability of a system to respond to disturbances brought about by changing climate. Burton et al. (2009) defines adaptive capacity as the ability of a system to adjust to climate change, including climate variability and extremes, to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. Most scholarship on adaptation and adaptive capacities has focused on studying the different forms, availability of, and access to resources to understand what enables or constrains the capacity to adapt (Adger et al. 2003; Brooks, Adger, and Kelly 2005).

Adaptive capacity is a function of several factors, such as levels of income, knowledge and skills, technology, access to information, equity in resource distribution, and access to opportunities (IPCC, 2001). Smit et al. (2001) identify some main features of communities or regions that seem to determine their adaptive capacity: economic wealth, technology, information and skills, infrastructure, institutions, and equity. The

equity feature is most relevant to this dissertation, and Smit states “differentiations in demographic variables such as age, gender, ethnicity, education attainment, and health often are cited as being related to the ability to cope with risk” (Smit et al., 2001, p. 895-7). Adger’s (2006) description of the features that determine adaptive capacity is more specific, stating that features include “levels of income, knowledge and skills, technology, access to information, equity in resource distribution, and access to opportunities” (Adger, 2006, p. 186). Adger also concludes that in all of these features, the poor and the marginalized have low adaptive capacity in most of the LDCs and poverty is both a condition as well as the effect of low adaptive capacity (Adger, 2006). These factors that describe the poor and the marginalized are also some of the factors that prevent them from adapting to climate change. An understanding of these issues is essential to this dissertation, as policy recommendations must address these factors and the disparities within them.

Amartya Sen (1982) discusses distributive justice as the equality of capability, where capability links resources to a persons’ welfare through the ability to lead the sort of life he or she has reason to lead. Capabilities determine what goods can do to or for people, and it can be argued that the risks of climate change will settle primarily upon people already affected by other current or future environmental and economic stresses. These people possess inadequate coping resources and limited adaptive capacities to buffer themselves from the further loss and harm that climate change may bring (Sen, 1982). Many women in the LDCs face existing inequalities in terms of capabilities, which will amplify their risks to climate change.

Following the equity literature, it is important to note that socioeconomic conditions driving emissions also influence adaptive capacities (Yoho, 2000) and thus there is an imbalance between rich and poor nations' ability to cope with climate change impacts. The countries that have contributed the most to global emissions are likely to cope better with the effects of climate change. Conversely, less developed countries tend to have lower adaptive capacities, as they are often limited by financial, technological, and governmental constraints (Schneider & Lane, 2006).

A. Socio-cultural Influences in Adaptive Capacity

The social and cultural dimensions of climate change are also important (Adger et al., 2013). Many scholars have identified cultural features and factors that influence adaptive capacity (Adger, 2006; Smit et al 2001), which are often geographically specific. An example from Adger et al. (2013), explains that in Burkina Faso different groups of pastoralists have responded to recurrent drought in different ways, with the Fulbe struggling to find alternative income streams, whereas their former slaves, the Rimaiibe people, have diversified their livelihoods through more extensive use of labor migration (Adger et al., 2013). A more gender specific example, also in Burkina Faso, comes from Nielsen and Reenberg (2010) who state that women in Rimaiibe households now contribute up to half the total income for the household, while only two women out of 20 households in Fulbe engage in any form of work aimed at earning cash. They attribute this difference to the Fulbe not wanting to do work that their former slaves have done, even though they are aware of its benefits (Nielsen & Reenberg, 2010). These cultural aspects can directly impact adaptive capacity, as they can empower women's and provide

a monetary safety net to adapt to climate change. Cultural dimensions can act either as a hindrance or enabler of adaptive capacity, and understanding adaptive capacity both in terms of the material aspects and the cultural aspects is an essential component of adaptation studies, as it greatly influences the vulnerability of communities and regions to climate change effects and hazards (Smit, 2001).

Paavola (2006) argues that adaptive capacity is context specific and can vary among social groups and individuals, between communities, and over time. Due to these changes, adaptive capacity can often be subjective and is always changing. This must be taken into consideration when developing policies to address adaptive capacity. Physical and intangible human capital consists, for example, of longevity, health, nutritional status, literacy, education, skills, and information, and their deficiency is a source of vulnerability because it has an adverse effect on incomes, human development, and the capacity to act to alter these outcomes (Paavola, 2006).

B. Political Influences in Adaptive Capacity

Research and policy on adaptive capacity has largely been focused on the material aspects of climate change, which includes risks to lives and livelihoods, the costs of decarbonizing economies and the costs of impacts on various sectors of the economies (Adger et al., 2013). As these are mostly quantifiable, they are easily included in policy analysis. Burton et al. (2002) points out that adaptation depends upon the capacity of the system to adapt, but also on the will or intent to use adaptive capacity to reduce vulnerabilities. This is an important and often over-looked component. Policies aimed to improve adaptive capacity can do nothing if there is not actual intent by the decision-

makers and the people to work hard to reduce the exposure to harm of vulnerable people and populations (Burton et al., 2002).

Eakin and Lemos (2010) discuss factors believed to build adaptive capacity, which mainly consist of the “free flow of ideas, knowledge and technology, more flexible and efficient institutions and governance schemes, policies that enhance human, social and political capital and more equitable flow of resources” (Eakin & Lemos, 2010, p. 7). Studies that seek to understand how adaptive capacity is built are essential to decision-makers, as they develop policies aimed to help societies adapt to climate change. Thinking about adaptive capacity in light of these multiple perspectives would help address some of the problems that make individuals vulnerable to climate change impacts, or provide the tools for individuals to adapt in the future.

The adaptive capacity literature provides a strong foundation concerning policy and provides detailed information to understand how political processes and structures can influence adaptive capacity. This literature guides adaptation policy development. Although this literature contributes to the understanding of how adaptation policies would build adaptive capacity and reduce vulnerabilities, little of adaptive capacity literature discusses women, specifically by offering any real world empirical evidence to suggest ways to build women’s adaptive capacity.

V. Vulnerability, Adaptation and Development

There is a strong connection between adaptation to climate change and development, as most adaptation strategies seek to address the underlying causes of vulnerability. Given this, there is high confidence that adaptation can be linked to other

development initiatives aiming for poverty reduction or improvement of rural areas (Nielsen et al., 2012; Dasgupta et al., 2014; Eriksen & O'Brien, 2007). Given the common goals of adaptation and development, theories from the development literature can apply to adaptation (Adger and Perrson, 2008; Beg et al., 2002; Schipper, 2007). This section follows the discourse on adaptation to climate change through the context of development.

Adger et al., (2007) illustrates that the success of adaptation in developing countries relies strongly on broader development progress. When adaptation is limited to responses specific to climate change, it neglects the fact that vulnerability to climate change does not emerge in isolation. For example, adaptation strategies may help to provide a rural household that grows a particular subsistence crop with a more drought-resistant variety, but a more robust and comprehensive adaptation strategy would seek to improve food security through a set of coordinated measures that include agricultural extension, crop diversification, integrated pest management and rainwater harvesting (Adger et al., 2007). Additionally, a poor rural household would be more likely to use these options if a family member were literate, if they have access to investment capital through local financial institutions, if they enjoy relatively intact social networks, and if they can hold policy makers accountable (Klein & Persson, 2008). In short, it takes a lot more than narrow, climate-focused measures to build adaptive capacity (Adger et al., 2007).

McGray et al. (2007) confirm this view. By reviewing over 100 initiatives labeled as adaptation they found that in practice there is little difference between these adaptation

initiatives and what can be considered good development. They argue that the difference lies more in the definition of the problem and the setting of priorities than in the implementation of solutions. The study presented a continuum, ranging from more narrowly defined activities aimed specifically at addressing impacts of climate change to building response capacity and addressing the underlying causes of vulnerability (Figure 2-6). NAPAs provide an adaptation policy in which development initiatives could flow through. If the linkages are made between the overall goals of adaptation and development, then NAPAs could work to promote both adaptation and development, through national, regional, and local policies.

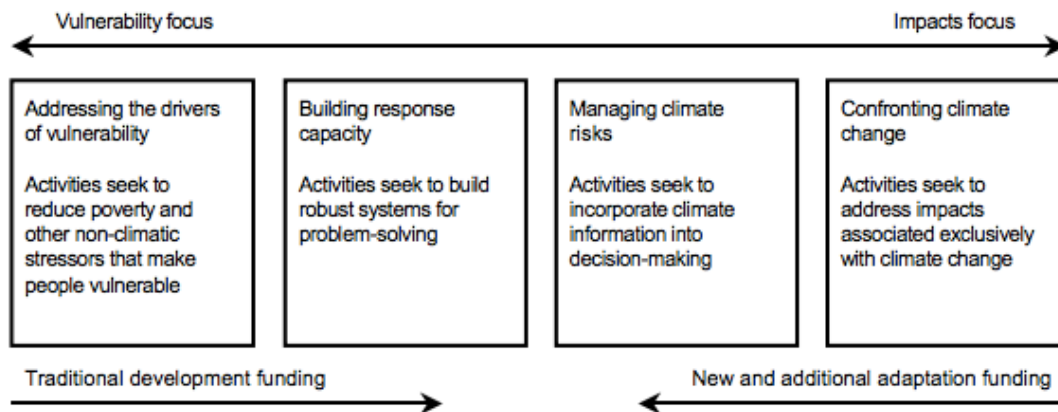


Figure 2-6: Adaptation as a continuum to address the drivers of vulnerability to confront impacts of climate change (Source: Klein and Persson (2008) adapted from McGray et al., 2007).

In contrast to adaptation being more successful when approached with other development mechanisms, it can be more difficult in terms of funding. Table 2-2 summarizes the pros and cons of stand-alone adaptation and mainstreamed adaptation in the context of adaptation funding. Klein (2008) discusses that regardless of whether funding is used to support stand-alone or mainstreamed activities, existing resources fall

short of the estimate costs of adaptation by roughly two orders of magnitude. This important aspect is examined in Chapter Four, which describes the costs of adaptation projects. By integrating development and adaptation in NAPAs, national, regional, and local governments could work together with NGOs in developing countries and combine funding projects to make more effective contributions to the country, which is discussed in Chapter Six in terms of Nepal's adaptation policy process. The discussion of funding is not prevalent in the vulnerability or feminist literatures, but provides an important component of any policy discussion. Acquiring funding is the only way in which to guarantee that policies will be implemented, and therefore, an understanding of what agencies will fund is essential.

	Stand-alone adaptation	Mainstreamed adaptation
Pros	Easy to calculate new and additional funding needs Country ownership	More efficient in implementation More effective, more sustainable impact
Cons	High administrative costs when scaled up Potential conflict with development objectives	Difficult funding situation, possible diverting ODA Seen as imposing conditionalities

Table 2-2: Stand-alone adaptation and mainstreamed adaptation compared
(Source: Klein, R. J., & Persson, A., 2008).

A. Sustainable Development

Additional linkages between climate change and development are increasingly recognized (Mather et al., 2004; Schipper, 2007; Simms et al., 2004). As sustainable development can reduce vulnerabilities to climate change, development initiatives that do not incorporate a sustainability approach to climate change can hinder adaptation efforts.

Development is typically driven by socio-economic patterns characterized by economic growth, technology, population, and governance. The patterns can also support vulnerability, and can determine the human capacity for mitigation and adaptation by giving people the resources to respond to climate change. Additionally, the impacts of climate change can impact socio-economic development patterns, and therefore, increase greenhouse gas emissions (Klein et al., 2003).

The World Summit on Sustainable Development (Johannesburg, August/September, 2002) included a strong emphasis on integrated strategies and partnerships, which supports the links between climate policy and development (von Schirnding, 2005). Mainstreaming is considered as a way to link these two areas. Mainstreaming is utilized in this dissertation in regards to mainstreaming gender in climate adaptation policies, but mainstreaming is also an effective tool for combining climate policies into development initiatives (Klein et. al., 2007). The use of mainstreaming in this regard is to ensure the long-term sustainability of investments as well as to reduce the sensitivity of development activities to both current and future climate changes (Huq et al., 2003). This example shows the importance of tackling these two initiatives (climate policy and sustainable development) and that the integration of these ideas will provide long-term policy solutions.

In addition to merging literatures on climate change adaptation and sustainable development, the idea of incorporating gender and development also has a prominent voice in the literature. Much like other aspects of climate policy, the gender dimensions of the climate change literature rely heavily on development organizations and literatures.

Two important policy perspectives are taken into account from development when addressing the gender dimensions of climate policy. These two perspectives are Women in Development (WID) and Gender and Development (GAD). These perspectives have a clear distinction between them and the approach that they take towards gender. WID aims to include women in development projects in order to make them more efficient. GAD address inequalities in women and men's social roles in relation to development (March, 1999). Both approaches are complex and bring important aspects of gender equality as well as considerations to gender mainstreaming. These concepts and approaches will continue to be discussed in the following sections, with specific reference to relevant literature and the research for this dissertation.

VI. Gender Discrimination

Many of the frameworks built to address adaptation, vulnerability, and adaptive capacity rarely address gender as a leading social component to building equitable strategies (Agarwal et al., 2005; Eriksen & Kelly, 2006; Fussel et al., 2006; Kelly & Adger, 2000; Tanner & Mitchell, 2008; Tol et al, 2005). Furthermore, two of the leading books on climate change adaptation, The Earthscan Reader on Adaptation to Climate Change (Shipper and Burton, 2009) and Fairness in Adaptation to Climate Change (Adger et al, 2006) discuss that the social dimensions of climate change will cause an unjust distribution of climate impacts, and that gender is one of the dimensions of this, but neglect to consider it with any substantial writing on the topic. Both of these books contain chapters that discuss the justice dimensions of the Global North v. the Global South and the economic divisions between the impacts of climate change, but do not

contain any discussion of gender. With such neglect in the literature to the gendered impacts of climate change, many of the case studies that utilize these frameworks do not make gender a priority and therefore gender is often left out of discussions on climate justice. Developing frameworks that incorporate marginalized populations, including women, can help to form a solid background so that research utilizing these frameworks will incorporate these important dimensions. Gender based inequalities are being masked by not being given adequate attention in matters that clearly have gender components. If public policy seeks to address those that are most in need of intervention, then certainly an analysis of gender needs to be included. Furthermore, understanding how policies can influence women's adaptive capacity to an uncertain future is imperative for NAPAs. This dissertation takes a focused look at NAPAs as they are currently written to understand how these documents influence women's capacity to adapt, and a closer look at feminist literatures will help to guide the understanding of the vulnerabilities women face to climate change.

A. Feminist Concepts

This dissertation seeks to understand the gender dimensions of climate change adaptation and how women's vulnerabilities are translated into policy, specifically NAPAs. Gender equality is a goal accepted by governments and international organizations, as well as by the UN, which has mandated NAPAs, and there are ongoing discussions about what equality means in practice and how to achieve it. The global patterns of inequality between women and men include the fact that women's political participation and their representation in decision-making structures lag behind men's and

that women and men have different vulnerabilities to climate change, partially due to different economic opportunities (UN Gender Mainstreaming, 2002). As mentioned in Chapter One, mainstreaming gender within policies provides an opportunity to reduce women's vulnerabilities to climate change and to improve the overall status of women within a country. The following paragraphs discuss the gender literature, past approaches to gender, and provide the background necessary to understand why gender is a main focus in this dissertation.

For the purpose of this dissertation, 'gender' is defined as "the social acquired notions of masculinity and femininity by which women and men are identified" and 'gender relations' as "the socially constructed form of relations between women and men" (Momsen, 2004, p. 2). There are also different dimensions of gender that constantly interact with each other and Davids and Van Driel (2002) list these dimensions as: the symbolic (cultural texts, representations, stereotypes), the institutional dimensions (in which the structural differences among women become visible, such as labor relationships), and the individual subject (the way individuals express their identity) (Davids & Van Driel, 2002). Gender affects the distribution of resources, wealth, work, decision-making and political power, and the enjoyment of rights and entitlements in all spheres (Dankelman, 2010).

Following recent literature on 'women' and 'gender,' this dissertation will refer to 'women' as groups of people and to 'gender' as a construct (Dankelman, 2010; Harcourt & Escobar, 2005; Jain, 2005). Following Dankelman (2010), I argue that socially constructed structural relationships such as rights and access to and control over

resources, level of decision-making power, as well as cultural aspects and identities provide important gender determinants to understand socio-ecological interactions – an essential dimension of climate adaptation.

The discussion of women, gender and the environment has been around since the 1950s and the way that this has evolved will shed light on how women and gender are discussed in climate adaptation policies. Homberg (1993) has categorized five main approaches that combine women, gender, and the environment. These approaches are: 1) The welfare approach of the 1950s and 1960s, which focused on the Western stereotype that women's work was restricted to the reproductive sphere. Women were thought of as victims of underdevelopment, which led to top-down handouts of goods and services (mostly consisting of food aid, while handouts in the 1970s included family planning programs) (Moser, 1993); 2) The equity approach of the early 1970s, which lacks an analysis of gender/power structures; 3) The anti-poverty approach of the 1970s which focused on the basic needs of women and their productive roles; 4) The efficiency approach of the late 1970s, which views women as human resources for development; and 5) the empowerment approach which has been inspired by Southern women and focuses on breaking historically based inequalities by strengthening and extending the power base of women (Homberg, 1993, p. 39-40).

Two notable academic contributions at the intersection of women, gender, and the environment include ecofeminism and the feminist environmentalist framework. These frameworks illustrate the differences in how women have been discussed in terms of their connections and interactions with nature and the environment. Ecofeminism, which

consists of some of the early work on women and the environment, connects exploitation and domination of women with that of the environment. Ecofeminism suggests that women and nature experience oppression in similar ways due to a patriarchal Western society (Merchant 1980; Shiva 1988). Some eco-feminists were criticized for focusing too much on the connection between women and nature and for their view that women are close to nature because of their biology, while not focusing enough on the actual conditions of women (Biehl, 1991; Ruether, 2003).

Vandana Shiva (1988) argues that women have a special connection to the environment through their daily interactions. She states that women in subsistence economies can become experts in holistic and ecological knowledge of nature's processes. She also makes the point that "these alternative ways of knowing, which are oriented to the social benefits and sustenance needs are not recognized by the capitalist paradigm, because it fails to perceive the interconnectedness of nature, or the connection of women's lives, work and knowledge with the creation of wealth" (Shiva, 1988, p. 114). Shiva's recent work suggests that a more sustainable and productive approach to agriculture can be achieved through reinstating a system of farming in India that engages women. She advocates against the prevalent "patriarchal logic of exclusion," suggesting that a women-focused system would change the current system in an extremely positive manner due to their knowledge of the system and technology suggestions (Shiva, 2004).

The feminist environmentalist framework, following Shiva but more recently outlined by Bina Agarwal (1992, 1997), argues that the unequal distribution of power, the division of labor, and gender and class structures shape individuals' relationship with

nature and their responses to it. She argues that poor peasant and tribal women will be affected in quite specific ways by environmental degradation since these women have typically been responsible for fetching fuel and fodder for their community. Following Shiva's work, Agarwal argues that at the same time, these women work closely within the environment they will acquire a special knowledge of it. Agarwal interprets this as women "could be thus seen as both victims of the destruction of nature and as repositories of knowledge about nature, in ways distinct from the men of their class" (1992, p. 9). Therefore, a feminist environmental prospective theorizes the link between women and the environment as being structured by gender and class production, reproduction and distribution. This theory best shapes this dissertation, as I focus on the women's vulnerabilities to climate change and their connections with nature from their daily lives that make them important contributors to climate adaptation and policy development (Dankelman, 2010).

Empowerment is often associated with feminism and feminist literature, and refers to increasing the economic, political, social, and educational resources of a group. Women's empowerment has grown from grassroots mobilizations into the gender and development agenda to become a more established initiative. Contributions from feminist scholars have drawn attention to the unequal power relations which block women's capacity to participate in, and help to influence, development processes, and have highlighted the changes that might promote this capacity at both individual and collective levels (Kabeer, 2012). Kabeer translated feminist insights into a policy-oriented analytical framework, which defined women's empowerment as the processes through

which women gained the capacity for exercising strategic forms of agency in relation to their own lives as well as in relation to the larger structures of constraint that positioned them as subordinate to men (1999; 2001). Alsop and Heinsohn (2005) describe individuals and groups as empowered when “they possess the capacity to make effective choices: that is, to translate these choices into desired actions and outcomes (Alsop & Heinsohn, 2005, p. 6). Empowerment plays a role in this dissertation as I argue that mainstreaming gender into NAPA will help to empower women and improve their overall status in society. Throughout this dissertation, I suggest that incorporating women throughout the NAPA development process, as well as incorporating their needs into implementable adaptation strategies and programs will increase women’s capacity to exercise forms of agency in relation to their own lives, following Kabeer’s empowerment work (Kabeer, 2012).

B. Adaptation and Gender

The gendered aspects of climate impacts and responses are gaining importance and more studies are being conducted to understand these complex situations (Djouidi & Brockhaus, 2011; Milne 2005; Nelson et al, 2002). Several scholars argue that woman’s livelihood activities make them vulnerable to the impact of long-term climate change (Denton, 2000; Lambrou & Laub, 2006). March et al. (1999) argue that in all societies, men and women are assigned tasks, activities, and responsibilities according to their sex, often called the gender (or sexual) division of labor. March states that these assignments vary between societies and cultures, and between circumstances and over time, but that in most societies, gender power relations are skewed in favor of men, and different values

are placed on men's tasks and women's tasks. These tasks are often described in terms of productive work or reproductive work (Dankelman, 2010; March, 1999). Productive work includes the production of goods and services for income or subsistence. This work is most commonly included in national economic statistics (discussed in Chapter Three) and is typically recognized and valued as work by individuals and societies. Both women and men conduct productive work, but can be valued or rewarded in different ways. Reproductive work encompasses the care and maintenance of the household and its members. These activities include cooking, washing, cleaning, nursing, bearing children and taking care of them, and building and maintaining shelter. Although this work is necessary, it is rarely valued similarly to productive work. This type of work is mostly done by women and is typically unpaid and not included in conventional economic statistics (March, 1999).

Hombergh (1993) also discusses the sexual division of labor as an important aspect of gender and climate change. The author suggests that the "sexual division of labor makes women, especially poor rural women in the South, important contributors to agriculture, and often makes them solely responsible for the collection of firewood, fodder and water" (p. 17). She argues that because of this division of tasks, women's knowledge about the environment is often more comprehensive, and therefore women's knowledge can be an important contribution to environmental management and rehabilitation (Hombergh, 1993).

Exacerbating the sexual division of labor is widespread labor market discrimination. Demetriades and Esplen (2008) show that despite growing female labor

force participation, women continue to be restricted to mostly low-status and poorly paid jobs. Some of these jobs include street vendors, home-based producers, and domestic workers (Chen et al., 2005; Chant & Pedewell, 2008). These jobs tend to be significantly disturbed by climate related disasters, limiting women's capacity to accumulate savings, which reduces their means for coping with insecurity (Demetriades & Esplen, 2008).

Lambrou and Piana (2005) suggest three aspects of gender differentiation in the impacts of frequent weather events and long-term stresses on the environment, including 1) increased male migration, which could further increase women's responsibilities inside and outside of the home (Delaney & Shrader, 2000); 2) changes in cropping and livestock production, which may affect the gender division of labor and income opportunities (Burton & White, 1984); and 3) decreased accessibility to resources, especially fuel wood and water, which may increase the workload for women and children (Bohle et al., 1994). These aspects are discussed throughout this dissertation, with empirical evidence in Chapters Four, Five and Six. Although these aspects do not necessarily make women more vulnerable, they emphasize the different burdens that women and men face from the impacts of climate change.

The disaster mitigation and response literature from Lambrou and Piana (2005) provides evidence that women are a vital resource and have the potential to challenge their gendered status in society. These potentials are: 1) women have proven themselves of vital importance in responses to disasters. After disasters, women have been willing and able to do traditionally male tasks, which has the effect of changing society's misconceptions of women's capabilities; 2) women are most effective at mobilizing the

community to respond to disasters, by organizing groups and networks of involvement; and 3) as a result of their response efforts, women are developing new skills in natural resource and agricultural management, which may represent opportunities for income generation (Lambrou & Piana 2005). Additionally, local knowledge in terms of adaptation to climate change is essential, and women are a vital contribution to this knowledge (Aguilar, 2010). By women taking an active role in disaster mitigation and response, it illustrates that women can also take an active role in adaptation efforts and highlights their potentially unique and valuable contributions.

The gender and natural disaster literature provides a strong and well-developed background for studies of gender and climate change. The literature typically focuses in three areas. The first is the disparities of social responses that are derived from race, class, gender, and age differences that result in an uneven impact from a catastrophe (Cutter, 2010). Zottarelli (2008) found that women were less likely to regain employment and more likely to obtain worse employment after a disaster. The second area of gender and disaster literature concludes that women are powerful agents of change and are useful in responding to natural disasters (Aguilar et al., 2007). Demetriades and Esplen (2008) discuss the awareness women and indigenous people have to the “complex ecological indexes of the timing of seasons” (p. 151), which can help to adapt to climate change and recover from natural disasters. Nelson et al. (2002) state that women are key to household survival when disasters strike in their ability to mobilize the household. The third area of the literature discusses the gender impacts of natural disasters. Demetriades and Esplen (2008) discuss the social constraints that differentiate the impacts of natural disasters by

gender. In Bangladesh, and many Asian countries, women cannot leave their homes without a male family member present. This impedes their ability to flee in the event of a natural disaster. Additionally, social constraints can prohibit women from learning to swim, which puts them in danger in times of flooding (Demetriades & Esplen, 2008; Nelson et al., 2002). These socially constructed vulnerabilities extend from gender and power relations (Blaikie et al., 1994; Enarson, 2000), which may vary nationally and regionally. The gender and natural disasters literature is a necessary component of all studies on gender and climate change and provides a basis of scholarship and empirical studies for this dissertation.

Despite the importance of women's knowledge and skills, gender biases in planning reinforce inequalities as men's voices are prioritized over women's in decision making. Often women and their concerns are unseen in the policy-making arena (Lambrou & Piana, 2005; Neefies & Nelson, 2010). Feminization of poverty is a term often used to describe the combination of environmental problems with the male biases in development policies and cooperation that have caused a relatively strong impoverishment among women (Homberg, 1993). This concept is utilized as we discuss women's lack of participation in decision-making in Chapters Four, Five, and Six.

Demetriades and Esplen (2008) describe some of the factors that enable or constrain women's participation in decision-making. Some of the enabling factors include: 1) an awareness of their rights and how to claim them; 2) confidence, self-esteem and the skills to challenge and confront existing power structures; and 3) support networks and positive role models. Some of the constraints include: 1) discriminatory

cultural and social attitudes and negative stereotypes perpetuated in the family and in public life; 2) burden of responsibilities in the home; 3) intimidation, harassment and violence; and 4) lack of access to information. Understanding these enabling and constraining factors is essential in order to build adaptive capacity and to build adaptation strategies and policies that promote equality. Dennison (2003) states that

The international climate change process will be unable to achieve truly global legitimacy or relevance until it adopts the principles of gender equity at all stages of the process, from scientific research, through analysis, agenda formation, negotiation and decision-making, regime implementation, and finally in further development and evaluation (Dennison 2003).

To address this need for gender responsiveness in all aspects and stages of the decision-making process, the concept of gender mainstreaming is becoming popular (UN Gender Mainstreaming, 2002). For many, mainstreaming means making gender concerns the responsibility of all in an organization and ensuring that they are integrated into all structures and all work. This approach is often criticized for diluting or distorting the issues or a lack of commitment. Another approach is to separate the systems and tasks necessary to address gender concerns and establish specialists to promote gender equality. This approach has been found to be weak or under-resourced (UN Gender Mainstreaming, 2002). March (1999) states that organizations need to use an approach that integrates gender concerns throughout the organization, as well as maintaining specialist departments or units in order to avoid marginalization and promote co-operation on gender issues (1999). Lambrou and Piana (2005) interpret the concept of gender mainstreaming as it seeks to integrate gender into all mechanisms, policies and measures, and tools and guidelines within the climate change debate. Many guides and

support materials have been developed in regards to mainstreaming gender into climate change research and policy development (Daly, 2005; Hafner-Burton & Pollack, 2002; Verloo, 2005). This dissertation seeks to understand if these materials have been utilized in the NAPA development process and how the policies and decision-makers have chosen to address gender and the gendered impacts of climate change. While there are many publications that describe the gendered vulnerabilities to climate change impacts (Demetriades & Esplen, 2008; Denton, 2002; Terry, 2009) very few (if any) studies have specifically focused on the empirical evidence of the gendered nature of adaptation strategies and policies.

While the gender literature provides a strong foundation of the vulnerabilities that women face, and their lack of inclusion in policy-making, there is little empirical research concerning why there is still a gender bias in policy development and implementation (despite decades of gender equality movements). There is also a lack of research that looks specifically at the policy development process to highlight areas where improvement is needed in order to mainstream gender. While there are many manuals that seek to provide guidance on gender mainstreaming and promoting gender equality in policies, there aren't any that bring these methods into the specific context of a certain policy document.

VII. Synthesis

The framework for this dissertation stems from theories within adaptation, vulnerability, development, and feminist literatures. The adaptation and vulnerability literature provides a strong background for developing policies that seek to reduce

vulnerabilities and guide LDCs towards developing adaptation policies that encompass national ideas with local needs. The development literature provides unique connections to adaptation, as goals of sustainable adaptation link directly with goals of development. While these three literatures overlook gender dimensions of climate change impacts (less so in the development literature), feminist literatures provide theories and empirical evidence suggesting that women will be burdened differently by climate change and that mainstreaming women's needs within policies will make adaptation strategies more useful to the most marginalized groups. This dissertation fills a gap in the literature about policy processes that hinder the progress of gender equality. As there isn't any available research that directly links gender mainstreaming and NAPAs, this dissertation provides empirical and theoretical evidence that would help decision-makers incorporate women and their unique needs into climate adaptation strategies.

CHAPTER 3

METHODS

I. Introduction

This chapter provides an overview of the research methodology utilized in this dissertation to advance our understanding of how NAPAs reduce gendered vulnerabilities and how women are included in the decision-making processes. Drawing upon both qualitative and quantitative analysis, I incorporate real life contextual understandings, multi-level perspectives, and cultural influences on decision-making processes (Johnson et al., 2007). Quantitative analysis of the data from NAPA documents, content analysis, and the analysis of interview responses form the mode of inquiry used in this research. These methods, used in tandem, help me to understand the sensitivity of NAPA processes, outcomes, and practices to gender inequalities.

The main purpose of this research is to understand the linkages between gender and adaptation, intersecting with other socioeconomic factors and climate variability, which are specific to the national, regional, and local contexts, while also being applicable for other regions and countries. Mixed methods approaches employ quantitative research to assess the magnitude and frequency of constructs, and qualitative research to explore the meaning and understanding of constructs (Johnson et al., 2007). This dissertation uses both qualitative and quantitative techniques, but relies heavily upon qualitative interpretations. More specifically, this dissertation utilizes a transformative mixed methods strategy, in which a theoretical lens is used as an overarching perspective within the design that contains both qualitative and quantitative data (Creswell, 1997).

II. Quantitative Analysis

Although there are many definitions and types of quantitative research, this dissertation refers to the systematic empirical investigation of social phenomena using statistical data and computational techniques (Given, 2008). The main objective of quantitative research is to develop and employ mathematical models, theories, and/or hypotheses pertaining to occurrences. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships (Creswell, 2012). Quantitative data is an essential component of this dissertation as it aids in reducing large quantities of data for analysis.

In Chapter Four, quantitative analysis is applied in two ways. The first is in quantifying the number of projects that are present in the NAPAs, and organizing them by category. Additionally, the proposed cost of projects is presented and both are represented in figures to visualize the data. The information utilized comes directly from the NAPAs, and is supplemented with financial data from the UNFCCC NAPA website. Quantitative analysis is also conducted in Chapter Five to analyze the percentage of countries that have included gender within the NAPA in different categories. For example, using the “women’s participation” category, I counted how many countries have included participation by women, and calculated a percentage of how many countries have incorporated this. This is calculated for all assessed categories in Chapter Five. The quantitative methods in this dissertation provide valuable insights into the

NAPA so that readers can get an overall assessment of what NAPAs provide, as well as a look at the importance of NAPAs to aid in adapting to climate change.

In addition to the quantitative analysis conducted for this dissertation, two quantitative measures are discussed throughout this dissertation: the Human Development Index (HDI) and the Gender Inequality Index (GII). I have used these established UN measures as a starting place in which to compare LDCs and to select countries for further consideration and analysis in Chapter Five.

A. Human Development Index

The HDI is used to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. It is a composite statistic of life expectancy, education, and income indices used to rank countries into four tiers of human development. The HDI compares three dimensions: a long and healthy life (measured by life expectancy at birth), being knowledgeable (measured by mean years of schooling and expected years of schooling), and a decent standard of living (estimated by Gross National Income (GNI) per capita). The United Nations Development Program (UNDP), that developed the HDI, states that the HDI can also be used to question national policy choices, “asking how two countries with the same level of GNI per capita can end up with different human development outcomes” (UNDP, 2013). The UNDP also suggests that these contrasts can stimulate debate about government policy priorities (UNDP, 2013). Klein (2009) argues that there are very few indices that are sufficiently uncontested to be of widespread use in international policy processes (including resource allocations) and the HDI is one of these indices.

Additionally, given that there is a widely recognized link between a country's development status and its vulnerability to climate change (both in the academic literature and in the negotiations under the UNFCCC Convention), the HDI may also be considered when defining countries as particularly vulnerable (Klein, 2009).

HDI is often used in disasters literatures, with O'Brien et al. (2006) comparing fatalities between low HDI countries and high HDI countries and identifying that there are considerably greater deaths in low HDI countries (O'Brien et al., 2006). HDI is also used in the adaptation literature as a category in which to measure adaptive capacity (or potential adaptive capacity) (Klein, 2009; Yusuf & Francisco, 2009).

Since the HDI does not reflect on inequalities, poverty, human security, or empowerment, nor does it consider the biogeographic characteristics of countries that may cause them to be particularly vulnerable, it is mainly only used in this dissertation in the selection of countries for Chapter Five, and in a brief comparison of vulnerabilities in LDCs. In order to assess gender dimensions of vulnerabilities and to provide a point of reference that is comparable across LDCs, GII is discussed.

B. Gender Inequality Index

The GII is an index for measuring gender disparity introduced in the 2010 Human Development Report by the UNDP (UNDP, 2013), and according to the UNDP, this index is a composite measure that captures the loss of achievement within a country due to gender inequality. GII can be interpreted as a percentage loss to potential human development due to shortfalls in the dimensions included (UNDP, 2013). The GII is used to assess the gender sensitivity of a country's legislation and decision-making (among

other things), also it is reasonable to hypothesize that countries with higher GII would demonstrate a greater commitment to reducing gendered inequalities in their NAPAs. This is discussed in Chapters Four and Five of this dissertation. If the link between GII and reducing inequalities is not established, I suggest that there are more intricate interrelationships of societal conditions that affect the gender sensitivity of NAPAs. By using the GII as an indirect measure of gender inequality, I demonstrate the utility of GII as a tool to assess gender sensitivity of a policy document (Chapter Five). The index uses three dimensions to assess the loss of achievement: reproductive health, empowerment, and labor market participation.

The GII's dimension of reproductive health has two indicators: the Maternal Mortality Ratio (MMR) and the Adolescent Fertility Rate (AFR). A low MMR implies that pregnant women have access to adequate health needs, therefore, as so the MMR will be used as an indicator of women's access to health care. A high AFR, which measures early childbearing, results in health risks for mothers and infants, as well as a lack of higher education attainment (UNDP, 2013). The MMR relates to women's vulnerability to climate change because access to health care can reduce women's vulnerabilities to climate change, specifically climate-induced disasters and public health issues (Denton, 2002; Field et al., 2012). The AFR also relates to women's vulnerabilities because increased health risks for mothers and infants could influence their ability to complete their gender specific roles, such as small-scale agriculture for feeding their family, and water collection. AFR also measures lack of higher educational attainment, which impacts women's ability to react to climate change and adapt.

Two indicators measure the empowerment dimension of the GII: a) the share of parliamentary seats held by each sex, and b) higher education attainment levels. It is suggested that access to higher education expands women's freedom by increasing their ability to question political decisions and increases their access to information, which expands their public involvement (UNDP, 2013). Women's inclusion in decision-making processes increases the possibility of considering women's needs more thoroughly in relevant policies, and it should also be reflected in each nation's climate adaptation document, the NAPA. Decision-making ability is also considered an asset and has been identified as a determinant factor of vulnerability and adaptive capacity (Aguilar, 2010).

The labor market participation factor of the GII is measured by women's participation in the workforce. This dimension accounts for paid work and individuals actively looking for work. The data are obtained through the International Labor Organization, but due to data limitations, women's income and unpaid work are not represented in this dimension. Since reliable data are not accessible, the UNDP considers labor market participation a suitable substitute for economic aspects of gender inequality (Bardhan & Klasen, 1999). Women's participation in the labor market can reduce vulnerabilities by providing a means out of poverty, and can increase adaptive capacity by giving them monetary means to access goods and services to adapt to climate change (Tovar-Restrepo, 2010). Cheston and Kuhn (2002) suggest that income-generating activities can significantly reduce women's vulnerabilities and provide increased status for women within their households. Additionally, it is suggested that a reduction in women's vulnerabilities can translate into empowerment if greater financial security

allows the women to become more assertive in household and community affairs (Cheston & Kuhn, 2002). Given the connections between vulnerability and the factors used to assess GII, it is justifiable to assume that countries with lower GIIs will have NAPAs that are more gender sensitive, which is assessed and discussed in Chapters Four and Five.

While the GII is generally recognized as the primary tool for capturing the loss of achievement due to gender inequality, and is often used as an indicator to judge overall gender inequality in a country, there are some major faults within the system and it may therefore not be very accurate or useful. Women's income and unpaid work are not represented, due to lack of data, but these variables are important for the overall status of women, and reflect considerable vulnerabilities and time commitments that the GII should consider. The GII also does not allow for high achievements in one dimension to compensate for achievement in another, which could result in ratings that do not reflect the true loss of achievement due to gender inequality. Furthermore, the GII is heavily quantified, while these issues are socially constructed and therefore more qualitative data should be interpreted for accurate descriptions of gender inequality.

Although HDI and GII are imperfect, and do not provide sufficient context on the processes and dimensions studied in this dissertation, these measures are often used in international policy discussions (Klein, 2009). These established measures provide a starting point in which to compare LDCs and also give a general sense of the status of the country in terms of development and gender inequalities. Additionally, given the widely

recognized link between HDI and vulnerability to climate change, I assumed that GII would have comparable links to women's vulnerability to climate change.

III. Qualitative Analysis

Qualitative research aims to gather an in-depth understanding of human behavior and the reasons that govern this behavior. Specifically, this type of research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2009). The qualitative method investigates the “why” and “how” of decision making, not just “what,” “where,” and “when” (Denzin & Lincoln, 2005). Two types of qualitative analysis are used in this dissertation: content analysis and the use of a case study. The following paragraphs will discuss these types of analysis and how they were applied in the relevant research chapters.

A. Content Analysis

This dissertation relies heavily on content analysis to systematically investigate the NAPA policy documents and to identify the components that relate to gender. Content analysis is a methodology in the social sciences for studying the content of communication. There are many definitions of content analysis, most of them being particular to the field which the researcher focuses on, and I utilize a broad definition of the term, from Ole Holsti (1968), which describes content analysis as any technique for making conclusions by systematically identifying characteristics of messages. More specifically, content analysis is a research method used to “analyze text data, focusing on the characteristics of language as communication, with special attention to the content or contextual meaning of the text” (Hsieh & Shannon, 2005, p. 1278). Content analysis also

entails “the subjective interpretation of the content of text data using the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p. 1278).

Typically, content analysis focuses on the words and phrases mentioned most often, which is a component of this research, but this analysis extends far beyond that. Chapter Four provides an overview of 49 NAPAs, in which the terms “gender” and “women” were searched for in the text. From the word search, specific sentences and ideas were copied from the text, coded, and organized into themes. The themes selected from analyzing the data (as well as following objectives from similar studies) are women’s vulnerabilities to climate change, general statements concerning gender, projects that specifically focus on women’s needs to adapt, gender as a priority project selection criterion, and women’s participation. The data are then described in these themes in Chapter Four and discussed in terms of relevance and significance. Utilizing content analysis in this regard allows me to organize the data in order to compare specific themes among all 49 NAPAs to draw general conclusions about NAPA documents. These findings are presented in tables in Chapter Four. Content analysis is also used in Chapter Five, as the data gathered in Chapter Four is discussed in relation to peer-reviewed journal articles and additional country specific information regarding gender sensitivity and inclusion in NAPA documents and processes. The content analysis conducted in Chapters Four and Five provide a prelude to the case study conducted for Chapter Six.

B. Case Study

Based on the advantages of the case study approach to address complexity and context-specificity (Creswell, 1997; Yin, 2002), I conducted a case study for Chapter Six of this dissertation. Case studies are a strategy of inquiry in which the researcher explores a program, event, activity, process, or individuals, in-depth. Cases are bounded by time and activity, and the researcher collects detailed information using a variety of data collection procedures over a certain period of time (Stake, 1995). The case study I conducted explores Nepal's NAPA in detail, while incorporating national, regional, and local contexts. Additionally, I seek to understand the political processes used to build and develop the NAPA document in regards to addressing context specific gender dimensions of adaptation in the country. Focusing on gender relations and other socioeconomic factors specific to Nepal, I explore how multiple factors could differentiate vulnerabilities between men and women in coping with and adapting to climate variability, as well as differences in participation in policy development.

The research for Chapter Six consists of two activities. The first is an in-depth analysis of Nepal's NAPA, utilizing content analysis discussed previously. From this, a deep understanding of climate impacts is gathered, as well as detailed information about the scope and depth of the NAPA and the gender components of the document. The second research initiative consists of 18 in-person semi-structured interviews with participants in the NAPA development process in Nepal. The interviews were conducted in Nepal in June of 2013 and were typically 20-40 minutes in duration. Two sets of interviews were conducted; half of the interviews were with individuals who were

directly involved in the NAPA processes, while the other half were conducted with individuals involved in the LAPA process. An outline of the questions posed can be found in Appendix B. As recording procedures for interviews, I used a predetermined sheet to log information learned during the interview, which is introduced by Creswell (1997). By using the interview protocols, I could systematically take notes during the interview about the replies of the respondents, but also outline ideas that came into mind in observing the respondents. Upon the approval of the interviewees, all interviews were voice-recorded. All of the voice-recorded interviews were transcribed in English (as all interviews were conducted in English) by the author upon return to the United States.

For data analysis of the interviews, based on the analysis strategies recommended by Creswell (1997), I took the following steps. First, I read through the entire transcribed interview responses collected in order to obtain a sense of the overall data. Secondly, I reduced the data by looking for key words used frequently by participants in the interviews. I developed codes to sort the text into categories. Based on the sorted and reduced information, I interpreted the data and the organized interpretations are found in Chapter Six. From the interviews and the analysis of Nepal's NAPA, a detailed description of the gender dimensions in the policy and the decision-making processes was assessed.

IV. Feminist Methodology

For all the processes of this research, including design, data-collection, and data analysis, I incorporated a feminist methodological approach. According to Creswell (1997), feminist research approaches aim to “establish collaborative and non-exploitative

relationships, to place the researcher within the study so as to avoid objectification, and to conduct research that is transformative” (p. 83). Firstly, realities are subjective and multiple, as there are the realities of the researcher, those of the individuals being studied, and those of the audience interpreting a study (Creswell, 1997). “Traditional” methodologies such as ethnography, which are biased towards the male perspective tend not to view Third World women as “knowers” and tend to ignore their realities (Beetham & Demetriades, 2007). To make this study gender sensitive, I attempted to ensure the perspectives of men and women were represented by interviewing both men and women, and by interviewing a gender specialist in Nepal and learning women’s perspectives from her.

To conduct the research for this dissertation, McPhail’s Feminist Policy Analysis (2003) approach is adapted and utilized. This framework lists the questions an analyst would pose in systematically examining any policy, regardless of whether it specifically focuses on and/or mentions women or not. The framework was built utilizing feminist policy literature to determine questions that have typically been asked of policy to determine the effects upon the status of women. The questions also examine policy to see how well it fits with the goals and values of feminist ideology (McPhail, 2003). The questions are divided into 13 sections, including: values, state-market control, multiple identities, equality, special treatment/protection, gender neutrality, context, language, equality/rights, care and responsibility, material/symbolic reforms, role change and role equity, power analysis, and ‘other’ questions that do not fit within the previous headings. McPhail (2003) suggests that researchers choose questions from this extensive

list in order to build projects that are feasible in length and time. From the framework, I have used questions that are the most relevant to understanding the gender dimensions of climate change adaptation programs to guide my research. These questions include but are not limited to the following:

1. Do feminist values undergrid the policy? Which feminism, which values?
2. How does the policy mediate gender relationships between the state, market, and family? For instance, does the policy increase women's dependence upon the state or men?
3. Does the policy address the multiple identifies of women? The multiple oppressions a single women may face?
4. Does the policy treat people differently in order to treat them equally well? Does the policy consider gender differences in order to create more equality?
5. Does any special treatment of women cause unintended or restrictive consequences?
6. Does presumed gender neutrality hide the reality of the gendered nature of the problem or solution?
7. Are women clearly visible in the policy? Does the policy take into account the historical, legal, social, cultural, and political contexts of women's lives and lived experiences both now and in the past?
8. Is the male experience used as a standard? Are results extrapolated from male experience and then applied to women?
9. Is there a balance of rights and responsibilities for women and men in this policy?

10. Are women involved in making, shaping, and implementation of the policy? In which ways were they involved? How were they included or excluded? Were the representatives of women selected by women?
11. Does the policy work to empower women?
12. How does the policy compare to similar policies transnationally? Are there alternative models that we can both learn from and borrow from?

These questions were used to guide my analysis and I seek to answer these questions throughout Chapters Four, Five, and Six.

The mixed methods approach that I use, with a feminist theoretical lens, allows for the combination of the strengths of each type of analysis to understand the complex dynamics as it relates to the thesis of this dissertation.

V. Synthesis

Applying a mixed-methods approach while analyzing the sensitivity of NAPA processes, outcomes and practices is essential. The combined attributes of qualitative and quantitative methods within the design of this research allows for inquiry to understand human behavior and the potential reasons behind this behavior, while at the same time, connecting the variables that may definitively link these behaviors to motives. A mixed-methods approach to this kind of research ultimately combines the quantitative and qualitative designs; “it involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study” (Creswell, 2009, p. 4).

This approach has allowed me to look at the 49 NAPAs submitted to the UNFCCC through different lenses and at different scales. McPhail's Gender Policy Analysis framework has allowed me to view this information through a gender lens to assess areas where gender has been adequately addressed and the areas in which improvement is needed. Since NAPAs are under review by the UNFCCC and under scrutiny from gender equality activists, the study of NAPAs, particularly through a feminist lens, is essential. A feminist policy analysis of NAPAs will serve as a template for government agencies and NGOs, as adaptation strategies will continue to be a necessity in response to future and potentially worsening climate change. Recommendations for advancing policy initiatives such as those provided in this dissertation will be timely and useful to the policymaking processes and leaders in the policy implementation phases.

CHAPTER 4

A GENDER SCAN OF 49 NAPAS: VULNERABILITY, PARTICIPATION, AND EQUALITY PROGRAMMING

I. Introduction

The UNFCCC provides an overall direction to formulate effective climate adaptation policies. The guidelines suggest that addressing gender within the NAPAs is extremely important and contributes to the overall goals of the NAPA. Under these guidelines, NAPAs should 1) be conducted in a participatory fashion, including stakeholders and local communities, 2) have a multidisciplinary approach, 3) complement and build on existing national plans and programs, 4) be guided by the perspective of sustainable development, 5) consider gender equality, 6) be driven by the country-specific needs and a country-driven approach, 7) incorporate sound environmental management, 8) exemplify cost-effectiveness, 9) be simple, and 10) allow for flexibility in procedures based on individual country circumstances (UNFCCC, 2002). There is a certain expectation from the UN that all countries will comply to their call to make NAPAs gender sensitive and to utilize gender mainstreaming in all components of the document and policy development processes.

To do so in this chapter, I look at the guiding principles of the documents in more detail. The first of the guiding elements established by the UNFCCC for NAPAs is that they be participatory, including stakeholder and local community input. The literature on evaluation of effective adaptation plans points to the importance of stakeholder participation, including local knowledge and the input of civil society groups (Adger et

al., 2005; Few et al., 2007; Measham et al., 2011). A participatory approach is important for the quality of information and insight that stakeholders (particularly local community members) can provide to the program. Local community members should also have a voice in identifying concerns that need to be addressed, as they are the most affected by the impacts of climate change (UNFCCC, 2002). Therefore, participation is one of the three categories that this chapter analyzes to compare how LDCs have included women and representatives of women in their NAPA processes.

The second and fifth guiding elements established by the UNFCCC for NAPAs provide further justification for the identification of gendered vulnerabilities and gender equality programming categories. The second guiding element states that NAPAs have a multidisciplinary approach, and incorporating gender equality components would ensure that NAPAs are multidisciplinary by addressing both climate adaptation needs in congruence with reducing women's vulnerabilities to the impacts. The fifth guiding element states that NAPAs should consider gender equality. By viewing the vulnerabilities that women face to climate impacts and how the NAPAs incorporate gender needs with the proposed projects, I can assess how NAPAs are considering gender equality.

Following NAPA guidelines, the NAPA is structured with the following six sequential sections:

- 1) An introduction and setting, which includes background information about the country that is relevant to the NAPA process. It covers characteristics of the country, key

environmental stresses, and how climate change and climate variability adversely affect biophysical processes and key sectors;

2) A framework for the adaptation program, which provides an overview of climate variability and observed and projected climate change, and associated actual and potential adverse effects of climate change. This overview is to be based on existing and ongoing studies and research, combined with historical information as well as traditional knowledge. Included in this section is a description of the NAPA framework and its relationship to the country's development goals. It will also describe the goals, objectives, and strategies of the NAPA, taking into account other plans and multilateral environmental agreements;

3) Identification of key adaptation needs, which includes past and current practices for adaptation to climate change and climate variability and relates these to existing information regarding the country's vulnerability to the adverse effects of climate change, climate variability, extreme weather events, as well as long-term climate change. Additionally, given the actual and potential adverse effects of climate change, this section calls for identifying relevant adaptation options including capacity building, policy reform, integration into sectoral policies, and project-level activities;

4) Criteria for selecting priority activities. This section includes a set of locally driven criteria that will be used to select priority adaptation activities. These criteria should include the level or degree of adverse effects of climate change, poverty reduction to enhance adaptive capacity, synergy with other multilateral environmental agreements, and cost-effectiveness. Additionally, the criteria for prioritization are: loss of life and

livelihood, human health, food security and agriculture, water availability, quality and accessibility, essential infrastructure, cultural heritage, biological diversity, land-use management and forestry, other environmental amenities, coastal zones, and associated loss of land;

5) List of priority activities, which will list priority climate-change adaptation activities that have been selected based on the criteria listed above. For each selected priority activity, a set of profiles are developed for inclusion in the NAPA document; and

6) the NAPA preparation process. This section describes the NAPA development process, including the process of consultation, the methods for evaluation and monitoring, the institutional arrangements, and the mechanism of endorsement by the national government (UNFCCC, 2002).

Guidelines four, five, and six of the NAPAs contain most of the useful data for this chapter. Guideline four includes the criteria for selecting priority activities. In this chapter, I will collect data regarding each country, asking if they include gender as a criterion for selecting priority activities. By including gender as a priority selection criterion, it becomes more evident that gender was given consideration when identifying potential projects, and highlights that the decision-makers understand that women's vulnerabilities can be reduced through implementing adaptation projects proposed in the NAPA. Guideline five encompasses the list of priority activities, which is an important component of this chapter, as I analyze the proposed projects for any inclusion of gender and/or women. Incorporating women's needs in the priority projects description indicates how women's needs would be met through the projects implementation efforts. Guideline

six is the NAPA preparation process and is analyzed for this chapter to identify how women were included in the process. The guidelines, steps, and sections of the NAPA provide valuable information for this chapter to analyze how NAPAs address gendered vulnerabilities to climate change and pinpoint areas in the text where gender is given consideration.

II. Methods

NAPA guidelines, provided by the UNFCCC, recognize that the impacts of climate change will be disproportionate, adding additional burdens to some sectors of society more than others (UNFCCC, 2002) and women are among them (Denton, 2002). This chapter will take a closer look at 49 NAPAs that have been submitted to the UNFCCC. My focus will be in the three following areas: a) gender differentiated vulnerabilities; b) gender equality programming; and c) women's participation and inclusion. Additionally, this analysis also gives insights into the factors that contribute to building gender sensitive policies by looking at how gender issues are addressed and who is actually involved in the process. By looking at these three categories across all 49 submitted NAPAs, I draw comparisons between how climate adaptation policies work to reduce gendered vulnerabilities and address women's needs.

This chapter is modeled after two similar studies, "How gender-sensitive are the National Adaptation Programmes of Action (NAPAs) of Sub-Saharan African countries? A gender-scan of 31 NAPAs" by Nathalie Holvoet and Liesbeth Inberg (2013) and "Gender Implications of Climate Change in Humanitarian Action: Gender and National Adaptation Plans of Action" produced by the Office for the Coordination of

Humanitarian Affairs (OCHA, 2009) and their gender advisory team. While following Holvoet and Inberg (2013) and OCHA (2009) in regards to methods, this chapter furthers both studies by incorporating additional NAPAs that have since been submitted to the UNFCCC and includes a more in-depth analysis of gender sensitivity.

The paper by Holvoet and Inberg (2013) focuses on NAPA's content and underlying processes (which is the format to organize preparatory processes and participation in diagnosis and decision-making), and compares the degree of gender-sensitivity over different NAPA phases as well as between sectors that are frequently associated with climate change (Holvoet & Inberg, 2013). The analysis focuses both on content and process of gender sensitivity of the NAPAs, and uses phases of the development process to analyze the gender sensitivity of the NAPA's content. With its focus on Sub-Saharan Africa, Holvoet and Inberg's (2013) study adds a significant dimension to regional climate change research and literature in a region most vulnerable to climate change, Africa. This analysis provides some methodological guidance and data about the content and underlying processes, but my chapter furthers Holvoet and Inberg's study by incorporating countries from Asia and Island Nations, while their research focuses solely on African countries. I also consider additional focal points outlined by the OCHA (2009) study.

The article by OCHA (2009) discusses three issues commonly associated with climate adaptation while analyzing 39 NAPAs submitted to the UNFCCC as of March 2009. The three focal points used to evaluate the NAPA's gender sensitivity in this paper are 1) if gender specific vulnerabilities were identified in

the NAPA; 2) if these vulnerabilities were addressed by the NAPA projects; and 3) how men and women participated in the NAPA formulation process (OCHA, 2009). I use the same categories to analyze gender sensitivity of the NAPAs, but my chapter incorporates an additional 10 NAPAs that were submitted to the UNFCCC since the OCHA article was published. My chapter also furthers both studies by providing additional discussion of how gender is addressed in the NAPAs and looks at additional dimensions, such as distribution of projects, budgets, the selection of gender as a priority selection criterion, and looks at participation from three perspectives.

This chapter combines these two approaches and uses them to analyze 49 submitted NAPAs and to compare them in gender sensitivity based on three variables that are frequently associated with gender analysis of climate change policies and identified in the OCHA analysis (OCHA, 2009). For the purposes of this chapter, vulnerability refers to the vulnerability that women face to climate change. Following OCHA's (2009) definition, gender equality programming refers to the inclusion of women and gender into the proposed projects in the NAPA and ways that women will be impacted by the projects. I have considered three aspects of participation in this chapter and these include: participation by women as individuals, participation by women's organizations (institutional), and participation by representatives for women's vulnerabilities. I identified these three aspects of participation after conducting a content analysis of all NAPAs.

The NAPAs used in this chapter are available in PDF in French and/or English, and these NAPAs were downloaded from the UNFCCC website. The documents were searched for terms “gender” and “women” (or “femmes” and “dames” for those NAPAs only available in French). The search led to sections in which women and gender are discussed. The sections in which women and gender are discussed in each NAPA are then organized in an Excel spreadsheet and coded by relevant category, which are then analyzed, presented, and discussed in affiliated sections throughout the remainder of this chapter. By organizing relevant information from the NAPAs in this way, I can compare how gender was addressed in different countries and in different categories. From this, I discuss the differences in approaches to addressing gender, notable contributions to gender dimensions, and areas where most NAPAs have failed to adequately address gender. Further methods, including a description of content analysis and quantitative methods used can be found in Chapter Three.

III. Organization of NAPAs

As stated previously, each country uses a format that includes six different sections for the NAPA. Although all NAPAs follow this framework, each individual country and the agency that is designated as leading author of the NAPA decides the depth in which they address these sections. A comprehensive list of each country’s leading author and the NAPA page numbers is found in Appendix A.

The main content of the NAPA is a list of ranked priority adaptation activities and projects, as well as short profiles of each activity or project, designed to facilitate the development of proposals for implementation. Using the same classification as

UNFCCC (2009), identified projects fall into 12 sectors: water resources, terrestrial ecosystems, energy, agriculture and food security, health, coastal zones/marine ecosystems, early warning systems and disaster risk management, education and capacity building, infrastructure, insurance, cross-sectoral, and other. Some projects and activities are difficult to classify into any one sector, therefore UNFCCC includes them in the “cross-sectoral” and “other” categories. Examples of “other” sector projects include tourism (Solomon Islands) or revision of laws (Angola). For each project proposed in the NAPA, a proposed project cost is also identified. Figure 4-1 and 4-2 illustrate the number of projects and their proposed cost, differentiated by sector.

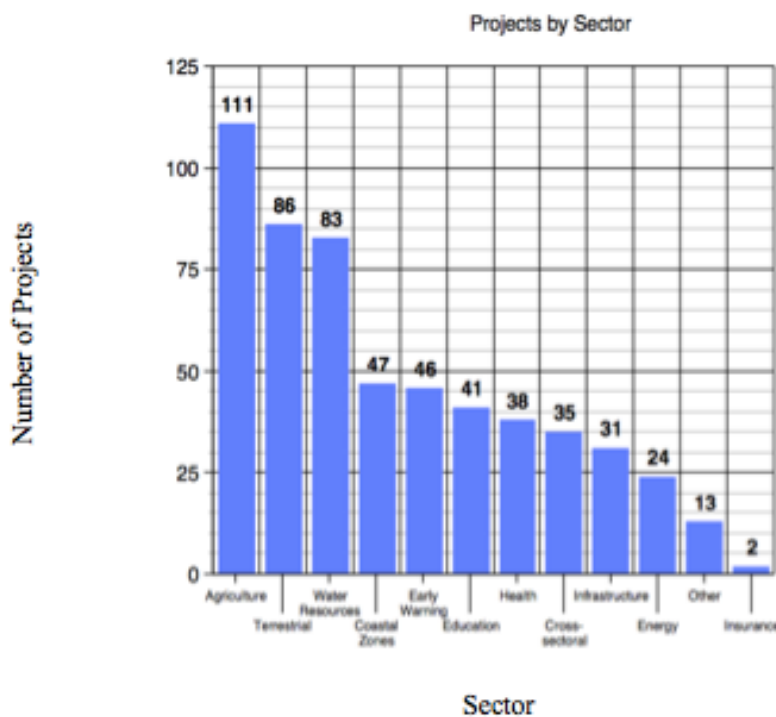


Figure 4-1: Number of projects by sector

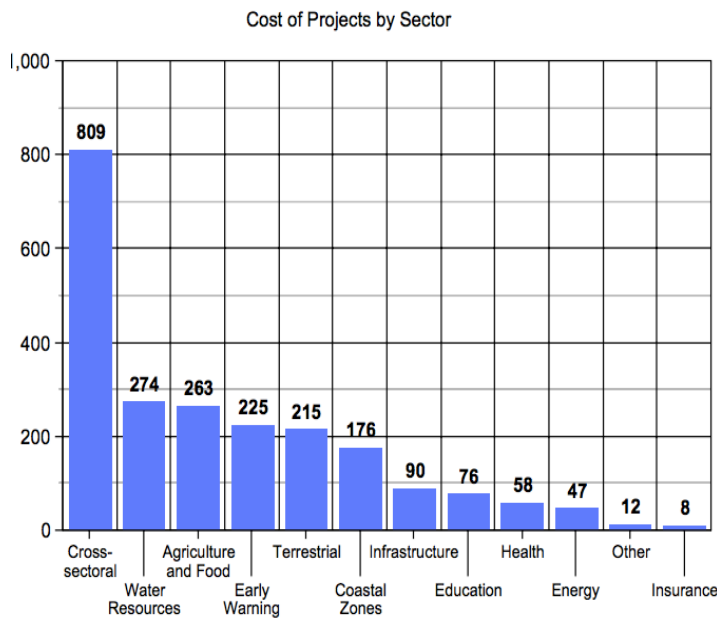


Figure 4-2: Cost of projects associated with each sector

The total number of priority adaptation projects identified in the NAPAs is 557, although the number of projects varies widely among the countries. Afghanistan has two projects, which is the fewest number of projects by any country. Mauritania has the most projects, with 28. In the NAPA preparation process, projects are ranked by each country's stakeholders in order of importance and expected outcomes of the projects. Outcomes that rank high in importance for project selection by most countries include mitigating adverse effects of climate change, poverty reduction to enhance adaptive capacity, synergy with multilateral environmental agreements, and cost effectiveness (UNFCCC/LEG 2002).

Figure 4-1 shows the distribution of projects by sector. Half of the projects fall into three sectors: agriculture and food security, terrestrial ecosystems, and water

resources. This can be explained by the fact that agriculture, livestock, fisheries and other income-generating activities rely on terrestrial ecosystems and water resources, which are important for feeding and sustaining livelihoods for millions of people (Hardee & Mutunga, 2010). These are essential outcomes and could have potentially catastrophic consequences if not given considerable attention. These projects are also given particular attention and increased (proposed) funding as they are climate sensitive sectors and will most likely be the first and most affected by climate change.

For each priority project that is identified, a cost of the project is also given. The total cost of all projects in the NAPAs is \$2,253,004,399.00. Cross-sectoral projects, while only accounting for six percent of the total number, requires 36 percent of the cost of all 557 projects. This is most likely explained by cross-sectoral projects having many activities with multiple, highly ranked outcomes. The cost of the three sectors with the most projects, agriculture and food security, terrestrial ecosystems, and water resources, fall within the top five sectors for cost of projects, demonstrating that there is a commitment towards funding projects to meet these high priority needs to adapt. In addition to the commitment towards funding, this is also an expression of the need for adaptation in the most climate sensitive sectors, which have direct associations with the marginalized people of the country.

IV. In-depth Analysis of NAPAs with Regards to Women's Concerns

As discussed previously, in order to analyze the inclusion of women and/or gender in the NAPAs, three categories are used: gender differentiated vulnerability, gender equality programming, and participation. In congruence with the gender

mainstreaming guidelines outlined in Chapter One, stating that it is important to “avoid assuming that all women or all men share the same needs and perspectives” (UN Gender Mainstreaming, 2002, p. 2), NAPAs should address vulnerabilities that women face to climate change and it is essential that decision-makers understand how vulnerabilities are gendered and specifically state them within the policy document. These vulnerabilities can be found in various sections within the NAPA documents, but it is important that they are included so that implementers of the NAPA are aware of these issues. Not all actors and stakeholders of the NAPAs are familiar with women’s vulnerabilities; therefore, this needs to be given specific attention in the document in order to be given serious attention in implementation stages.

The second category analyzed in this chapter, gender equality programming (GEP), follows OCHA’s (2009) definition, which refers to the inclusion of women and gender into the proposed projects in the NAPA and includes ways that women will be impacted by the projects. Since the priority projects hold valuable insights into the implementation aspects of the policy, it is important that the project proposals discuss women in terms of their needs relating to the project and the outcomes of the project, as they influence women’s livelihoods and empowerment. Once again, this lays the initial groundwork for implementers that may not have experience addressing women’s needs.

Thirdly, participation in the NAPA is a key element to understanding gender dimensions of the policies, as local women hold valuable information on climate change and adaptation strategies. This is also an important component of gender mainstreaming, and it is stated that it is important to “seek the inputs and views of women as well as men

about decisions that will affect the way they live” (UN Gender Mainstreaming, 2002, p. 2). Gender differentiated vulnerabilities, gender equality programming, and participation provide the three best categories to analyze gender in the NAPAs, following the guidelines established by the UNFCCC. Table 4-1 is a compilation of the information that was collected from NAPAs used in this chapter. The countries are organized by region: Africa, Asia, and Island Nations. Additionally, the countries are also organized by date submitted, with the first submitted NAPAs on the left and the latest NAPAs on the right.

I originally assumed that gender mainstreaming would increase over time, with the most recently submitted NAPAs being the most gender sensitive. Preliminary studies found that this was not the case and that date submitted did not relate at all to gender sensitivity. This is evident within Table 4-1. By compiling the data collected for this chapter into one summarizing table, it also becomes evident that the NAPAs vary widely in their inclusions of the categories studied. In African countries, general statements concerning women’s vulnerabilities are popular, while only one Island Nations country includes a general statement. Meanwhile, four countries in Africa, two countries in Asia, and one country from the Island Nations do not address any of the components of this analysis in their NAPAs.

31 LDCs (63 percent) out of 49 have recognized women's specific vulnerabilities (among other marginalized groups) to climate change in their NAPAs. Even though more than half of the countries have addressed gendered vulnerabilities to climate change, many of the NAPAs do not include specific vulnerabilities associated with women and marginalized communities and/or only discuss vulnerabilities in certain sectors. For example, Angola only states that women are identified as a target group for provisions to basic quality health services, but fails to state why they are vulnerable in any other climate related sectors and why they should be a target group for health care services (MoE, 2011). Furthermore, 18 countries do not address gender differentiated vulnerabilities at all, which will hinder the ability of the reader to understand how women in the country will be vulnerable to climate change.

Addressing vulnerabilities to climate change differentiated by gender is an important first step to promoting gender equality and lays the groundwork to promote women's inclusion throughout the NAPA implementation stages. It also specifies the most important vulnerabilities women face in each country so that adaptation strategies can be consistent in their efforts. Table 4-2 contains the data from of the NAPAs pertaining to women's vulnerability divided by sector.

Agriculture and Food Security	Cape Verde	Women identified as vulnerable to agricultural changes, as the female agricultural population ranges from 45-56 percent, depending on the region (p. 28).
	Gambia	Impacts on rice production due to disappearance of freshwater swamps and soil salination will have a negative impact on women (p. 16). Rising tidal levels will impact women rice and vegetable farmers (p. 22).
	Guinea-Bissau	Women are the main users of small-valley ecosystems, which are subject to flooding and sedimentation (p. 24).
	Malawi	“Female-headed households and women in general are among the most vulnerable in the predominantly agricultural culture (90% of the population is engaging in rain-fed agriculture, 60% of these people are food insecure all year). Already vulnerable groups are becoming more at risk, one of the added reasons being accredited to gender inequality (p. 1).
	Mauritania	Women mainly carry out preserving fish and adaptation strategies are developed in some local communities (p. 25).
	Myanmar	Pregnant women and children are severely impacted by lack of adequate nutrition (p. 21)
	Nepal	Women consume less food during shortages causing undernourishment and weakness especially during pregnancy and lactation (p. 61).
	Niger	Pregnant women and women that have children to care for will be particularly vulnerable to malnutrition (p. 15).
	Solomon Islands	“Climate impacts that lead to changes in agricultural production will have a major and direct impact on women because of their central role in agricultural production. Their work could be made much harder, leading to less time for other activities and potentially forcing them to seek other sources of income to be able to provide food for the family. There could be resulting social issues and health issues such as nutritional deficiency” (p. 32).
	Somalia	Women are particularly vulnerable to food insecurity and malnutrition (p. 34).
	Zambia	Women described as being particularly vulnerable to decreased agriculture production and diseases. Additionally, women headed households have increased vulnerabilities (p. viii).
Economy/ Labor	Comoros	Women retailers identified as vulnerable since they are often heads of one-parent families (p. 84).
	Democratic Republic of Congo	Estimated that 44% of women (compared to 22% of men have no income (p. 78). The main cause of poverty of women is due to hard market conditions of work, demanding role of wife and overwhelming motherly duties. Poverty is also explained by difficult access to land, credit, and training (p. 84). Women and children exclusively gather firewood, often in areas far from living environment (p. 14). A minority of women (10%) have the right to manage their own property. In rural areas, women account for 75% of food preparation, and 60% of production, while the income rightfully belongs to the husband (p. 84).
	Gambia	Impacts on rice production due to disappearance of freshwater swamps and soil salination will have a negative impact on women (p. 16). Rising tidal levels will impact women rice and vegetable farmers (p. 22).
	Guinea-Bissau	Women are the main users of small-valley ecosystems, which are subject to flooding and sedimentation (p. 24).
	Myanmar	The NAPA recognizes that women and children will be particular vulnerable to economic/livelihood losses as well as abuses after extreme weather events, also that women will be negatively impacted in high impact areas (p. 31).
	Nepal	Due to limited access to credit, market, land, and agricultural extension services, women are more vulnerable to adverse climate change impacts. Male out-migration imposes additional workload on women (p. 61).
	Sao Tome and Principe	Increase of women's poverty due to women's loss of life or livelihood (p. 13).
	Uganda	The NAPA document recognizes differential impacts by women, men, and children (p. 3). Women have key role in looking after the households (p. 59).
Health	Angola	Women identified as target group for provisions to basic quality health services (p. 31).
	Burkina Faso	Female farmers and pregnant women are identified as vulnerable.
	Comoros	Pregnant women identified as one of the most vulnerable population to malaria (p. 73).
	Eritrea	Pregnant women identified as one of the most vulnerable groups to long-term climate change health impacts (p. 11).
	Lesotho	Women, along with the elderly, children, and people living with HIV and AIDS are the most vulnerable. These are mostly found among rural communities (p. 3).
	Myanmar	Pregnant women and children are severely impacted by lack of adequate nutrition (p. 21).
	Nepal	Due to socially constructed multiple roles, more women than men die or get injured from climate change related health hazards. Climate change exacerbates gender differentiation and poor health of women. Women bear the brunt of providing increased care of vulnerable children, sick, disabled, and old age people. Climate change induced diseases, such as respiratory disorders- allergy; asthma and other respiratory diseases appear more among women, marginal people including children. This leads to women's illness, and physical and mental stress (p. 61).
	Solomon Islands	Health issues and increases in disease will put extra burden on women and children (p. 39).
	Somalia	Women identified are vulnerable to food insecurity and malnutrition (p. 34).
Water	Tanzania	Women and children are more vulnerable to malaria than men due to roles played in society. Poverty influences adaptation to malaria/cholera (p. 8).
	Afghanistan	Young women and children are vulnerable during drought as they may be sold into marriage so that their families can afford to eat (p. 74).
	Haiti	Women and children take hours to locate water for themselves and their families (p. 55).
	Nepal	Women are often the household members who look after water, firewood, and energy management. Any risk involving them should be addressed in climate adaptation strategies (p. 61).
	Samoa	Women identified as responsible for maintaining water sources by cleaning and keeping it on a safe hygiene level (p. 18).
	Solomon Islands	Changes to the quality and quantity of water will have a large impact on women and girls and their safety and security, if they need to travel further to collect water, which also leads to less time for other activities (p. 36-37).
	Somalia	Women identified as vulnerable to rape and gender-based violence in camps and during migration due to drought (p. 34).
	Zambia	Gendered roles are discussed and there is increased burden on women to collect water and firewood (p. 10).

Table 4-2: Women specific vulnerabilities differentiated by sector

ii. General Statements: Many countries include generalized statements that address the importance of understanding gendered vulnerabilities. For example, Eritrea's NAPA states "In Eritrea, the groups that are most vulnerable to climate risks are those that directly depend upon natural resources for their livelihood. Women, children, and elderly people are the most affected in any group" (2007, p. 10). As in many LDCs, due to the gender division of labor, it is women who are most reliant upon natural resources for their livelihood (Agarwal, 1989; Elmhirst & Resurreccion, 2012). Generalized statements addressing the importance of understanding gendered vulnerabilities are important components of the NAPA and illustrate that women and gender were considered at the initial stages of policy development. While these statements are significant, they do not reflect the overall commitment towards understanding the gendered dimensions of climate change or to addressing adaptive capacity, as we will see in the following sections of this chapter. The description of vulnerabilities, found in Table 4-2, is a more specific way to discuss women's vulnerabilities than general statements, Table 4-3, and may be more a useful inclusion in the NAPAs.

General statements concerning women and adaptation	Afghanistan	Women are extremely vulnerable given their general immobility and dependence upon the male members of the household (p. 74).
	Angola	NAPA states that a higher number of family units are headed by women due to vulnerabilities to climate change (migration of men) (p. 54).
	Bangladesh	Gender is identified as a vulnerability factor to livelihood (p. 16). The poor are identified as the most vulnerable to climate change within each community. Women, children, elderly, and the sick within the poor are the most vulnerable. "Therefore, any attempt to adapt or cope with the adverse impacts of climate change will need to have special emphasis on protecting and helping these most vulnerable groups" (p. 17).
	Burkina Faso	Female farmers and pregnant women are identified as vulnerable. Women were given attention in the preparation of NAPA due to their obvious vulnerability to climate change (p. 29).
	Central African Republic	Women are recognized as a vulnerable group affected by climate change and pregnant women and children younger than five are cited as the most vulnerable to be mainly represented (p. 41).
	Chad	Women and children identified as highly vulnerable (p. vi).
	Comoros	Pregnant women identified as one of the most vulnerable populations to malaria (p. 73).
	Democratic Republic of Congo	Illiteracy rate among women is very high compared to men (1995, 45% to 17%, men, cited in NAPA), due to school dropouts (pregnancies, early marriage, tradition that girls should not attend) (p. 84).
	Djibouti	Women will be affected by drought, increased temperatures, rising sea level, and salinity (p. 39). Women and young people are among target groups, and should be considered in the selection of activities to be undertaken. Their ability to adapt to climate change is particularly weak and must be reinforced (p. 50).
	Eritrea	"In Eritrea, the groups that are most vulnerable to climate risks are those that directly depend upon natural resources for their livelihood. Women, children, and elderly people are the most affected in any group" (p. 10). Women are discussed particularly in 'rural dwellers' group (p. 10).
	Malawi	Climate change impacts on gender was one of eight sectors analyzed. The NAPA states that "women bear the most of the burden in activities that are most impacted by adverse climate." Additional burdens are placed on women as a result of the HIV/AIDS epidemic (p. x).
	Mauritania	The adverse effects of climate change disproportionately affect women (p. 7).
	Myanmar	Gender, along with geographic areas and livelihood types, are selection criteria used to ensure equal representation of a balance of vulnerable groups (p. 43).
	Nepal	"Men and women differ with respect to climate vulnerability. Since women are largely engaged in climate sensitive sectors, any degree of adverse climate change effect increases their vulnerability." Additionally, socio-cultural and institutional arrangements aggravate climatic vulnerability (p. 14).
	Niger	The NAPA recognizes that women may be disproportionately poor in rural areas (p. 13).
	Sao Tome and Principe	Women identified as suffering more directly from the effects of climate change (p. 8).
	Senegal	Women are recognized as a vulnerable group, both in terms of climate change and poverty (p. 39).
	Sierra Leone	Sensitization and awareness raising of climate change impacts on women identified as an urgent and immediate adaptation need (p. xiii).
	Somalia	Women's particular vulnerability is given a detailed description including addressing women's roles in relation to climate change impacts (p. 38). The particular impacts from disasters on women is addressed in detail (p. 40).
	Timor-Leste	During the NAPA process, "women had been consistently identified as one of the most vulnerable groups" (p. 41).
	Uganda	'Famine marriage,' rich men marrying young girls, is an identified risk, with the added issues of school dropout, STIs, and other reproductive complications (p. 45).

Table 4-3: General statements concerning women and adaptation

Discussing specific vulnerabilities that women face in each country, as opposed to generalized statements about women's vulnerability, make NAPAs more credible. For example, Nepal's NAPA specifically states "women are often the household members

who look after water, firewood, and energy management. Any risk involving them should be addressed in climate adaptation strategies” (MoE, 2010, p. 61). When a NAPA can describe the specific vulnerabilities women face to climate change, sensitivity of the NAPA towards women’s concerns are apparent and useful information is then provided to NAPA implementers, NGOs, and local people (among others) about women’s needs to adapt to climate change. The following paragraphs provide some examples from the NAPAs that demonstrate different approaches to including women’s vulnerabilities to climate change.

Nepal’s NAPA provides a detailed description of the vulnerabilities faced by women and men (MoE, 2010). Nepal has specifically stated the vulnerabilities that women and men face in regard to the six thematic areas identified in their NAPA: water & energy, agriculture & food security, forestry & biodiversity, urban settlements, public health, and climate induced disasters. This information is presented in a table that is easy to read and includes a description of the gendered vulnerabilities faced, and is incorporated as an appendix to the NAPA document (and can be found in Appendix C of this dissertation). Nepal’s NAPA states “men and women differ with respect to climate vulnerability. Since women are largely engaged in climate sensitive sectors, any degree of adverse climate change effect increases their vulnerability” (MoE, 2010, p. 14). The NAPA also states that socio-cultural and institutional arrangements aggravate climatic vulnerability (p. 14). While the inclusion of a table at the end of the document to address gendered vulnerabilities separates the information from the main content of the NAPA, it is unique and exceptional for a NAPA to include this in-depth gendered perspective.

Other countries could use this as a starting point for addressing gender within their NAPA documents, although I would suggest incorporating the information throughout the main text of the NAPA to follow mainstreaming guidelines.

The Democratic Republic of Congo also addresses women's vulnerabilities comprehensively and uniquely. The NAPA addresses many of the reasons why women are particularly vulnerable due to their socio-cultural constraints and countrywide gender inequalities. The document describes many social inequalities that reduce women's adaptive capacity to climate impacts. The NAPA states that it is estimated that 44 percent of women (compared to 22 percent of men) have no income (MoE, 2006, p. 78), and that literacy rates are very low for women compared to men due to school dropouts from pregnancies, early marriage, and traditions that girls should not attend school (p. 84). The NAPA also states that the main causes of poverty for women are due to hard market conditions, demanding roles of wives, overwhelming motherly duties, and that poverty is also explained by difficult access to land, credit, and training (p. 84). Very few women (10 percent) have the right to manage their own property. In rural areas, women account for 75 percent of food production, while income rightfully belongs to their husbands (p. 84). Although the NAPA does not specifically address ways to reduce these vulnerabilities, it is significant that the country has brought them to the forefront of their NAPA so that gender inequalities can become more widely understood and hopefully addressed in implementation activities.

From the Island Nations, the Solomon Islands NAPA incorporates women's vulnerabilities in multiple sectors. The NAPA specifically states that women will be

directly impacted due to changes in agricultural production. The NAPA describes how changes in the quantity and quality of water will have a large impact on women and girls and their safety and security will be impacted if they need to travel farther to collect water. The NAPA discusses how this will impact the time women and girls have for other activities (p. 36-37). Thirdly, the NAPA discusses that health issues and increases in diseases from climate change will put an extra burden on women and children (p. 39). As many NAPAs only briefly describe women's vulnerabilities, the description of these inequalities from the Solomon Islands can be used as a model for other countries to more thoroughly describe vulnerabilities.

Although many countries do not address gendered vulnerabilities in all sectors, a majority of the NAPAs do address some gendered vulnerabilities to climate change. It is important that countries include gendered vulnerabilities for a few reasons. Stating these vulnerabilities illustrates that they have been discussed, understood, and deemed worthy of inclusion by someone in the NAPA process. This indicates even a small commitment to women's equality. Secondly, stating gendered vulnerabilities in the NAPA gives these differences a chance to be understood by individuals who may not have been exposed to gender issues in the past. Thirdly, by giving specifics about women's vulnerabilities, solutions to equality problems may be more easily approached by implementers. Finally, the incorporation of women's vulnerabilities follows the gender mainstreaming objective to "obtain the data or information to allow the experiences and situations of both women and men to be analyzed" as outlined in Chapter One (UN Gender Mainstreaming, 2002, p. 2). While it is important that gendered vulnerabilities are mentioned in the NAPAs,

there is no evidence at this time that these inclusions will be translated into action through priority project profiles or implementation of the NAPA projects, but it is an important initial step.

B. Gender Equality Programming

Following OCHA (2009), gender equality programming refers to the ways that NAPA documents addresses gendered vulnerabilities. Specifically, gender equality programming for this dissertation refers to any application in the NAPAs project profiles that seeks to address women's vulnerabilities or reduce inequalities. This also includes identifying the promotion of gender equality and women's empowerment as an activity selection criterion.

i. NAPA projects that specifically target women: More than half of the NAPAs recognize that vulnerability to climate change is differentiated by gender, but only a few of the project proposals specifically attempt to reduce vulnerabilities based on gender. To analyze the gender equality programming of the NAPAs, I look at the project proposals contained within each country's NAPA. Within all 49 NAPAs, there are a total of 557 projects. Out of these 557 projects, 59 (10 percent) mention women or gender, and yet only six NAPA projects, from Benin, Mali, Mauritania, Niger, and Sierra Leone, are specifically about women. Niger is the only country with two projects that specifically target women. Table 4-4 presents these projects along with a brief description.

Public Health	Benin, 2008	<u>Protection of children under five and pregnant women against malaria in the most vulnerable areas to climate change.</u> Contribution to the reduction of morbidity and mortality that relate to malaria in Benin (p. 68).
Agriculture	Mali, 2007	<u>Promotion activities of revenue generators and development of mutual [equality].</u> Seeks to improve incomes and strengthen women's capacity to adapt to climate change through promotion of income-generating activities (p. 50).
Livestock	Mauritania, 2004	<u>Livestock farming, Promotion and development of domestic poultry farming.</u> "Women's cooperatives will be in charge of village poultry farming, it is hoped it can serve as a gateway for women to other parts of small-scale farming (p. 44, quote from OCHA, 6).
Agriculture and Livestock	Niger, 2006	Includes support for income-making activities through livestock farming for women (p. 42).
Economy	Niger, 2006	<u>Promotion of income-making activities and development of mutual benefit societies.</u> Women and children often left in villages during droughts when men out-migrate. Program focuses on income generating activities for women and children (p. 45).
Education	Sierra Leone, 2008	<u>Sensitization and awareness raising campaigns on climate change impacts on women relating to the three conventions of biodiversity, desertification, and UNFCCC.</u> Education for women and children about climate change impacts (p. 43).

Table 4-4: NAPA projects that specifically target women

Although 59 projects mention gender within their proposals, many of these often only list women as beneficiaries of the projects, which doesn't necessarily mean that women are active participants or that gender equality is an important aspect of the project. On the other hand, most projects will benefit all people vulnerable to climate change, which includes women. It is important to look at the specifics of the projects and the implementation phases to determine how it will impact women.

ii. Women's Empowerment as a Priority Project Selection Criterion: Twenty-six NAPAs (53 percent) mention gender equality or women's empowerment as priority project selection criterion, used to evaluate adaptation projects. This means that when the selection committee was choosing projects to include within the NAPA, only twenty-six of the countries included women's empowerment as a criterion for the selection of projects. The following passages, presented in Table 4-5, come directly from the NAPAs regarding this idea. Bangladesh has approached both gender equality and women's empowerment in their project priority selection process, as their NAPA states that "poverty reduction and security of livelihoods with a gender perspective has been ranked as the most important set of criteria for prioritization of adaptation needs and activities" (p. 23). This commitment to gender equality and women's empowerment should be used as an example for other countries, especially those that understand that women are vulnerable to the impacts of climate change and could receive the most benefit from climate change adaptation projects.

Given that over half the NAPAs state that women and men face different vulnerabilities to climate change (and that often women's vulnerabilities are worse than men's) and include women's empowerment as a project selection criterion, it is surprising that only six project proposals focus on women's needs. There are many theories as to why there is this disconnect, including a lack of sincere commitment towards gender equality, the inability of policy-writers to translate women's vulnerability needs into implementable projects, and/or policy-writers expecting implementers to address gender issues without stating so in the project description, to name a few. These

ideas are explored more fully in regards to Nepal's decision-making process in Chapter Six of this dissertation. In order for gender to be included in the implementation phases of NAPA projects, it is essential that gender equality programming be a primary focus within the project proposals. Otherwise, all gender inclusion will be subject to the implementation agencies' abilities.

Women's empowerment as a selection criterion	Bangladesh	Gender equality is listed as an activity selection criterion (p. 22). Following the NAPA guidelines "poverty reduction and security of livelihoods with a gender perspective has been ranked as the most important set of criteria for prioritization of adaptation needs and activities" (p. 23).
	Bhutan	A goal chosen to guide the development of the NAPA is to promote gender equality and empower women (reduce gender disparity in tertiary education) (p.11). Gender equality as a guiding principle. "The NAPA process promoted equal participation of both men and women from the formation of the NAPA taskforce. Gender equality was also emphasized during the regional consultations." (p. 12).
	Burkina Faso	Gender is a selection criteria identified for regional workshops on vulnerability (p. 23).
	Burundi	One of the criteria for selecting priority options of adaptation is that it will reduce poverty especially among women (p. 24).
	Chad	Development objectives seek to take into account the advancement of women (p. 36). Promoting economic opportunities for women will reduce poverty (p. 31).
	Central African Republic	Gender equality was one of the guidelines for the NAPA (p. 19).
	Ethiopia	Integrating gender into all development activities is identified as a development goal of Ethiopia (p. 31).
	Gambia	Addressing gender inequalities mentioned as a factor leading to poverty, which is included in national development plans (p. 31).
	Guinea-Bissau	Gender is one of six criteria for selection of adaptation options. Gender is used to assess implications for the most vulnerable segments, with emphasis on women and children (p. 47). Table 9 shows ranking of criteria for each project, including specific rankings for gender in each project (p. 49).
	Malawi	Gender is one of eight criteria used to select projects (p. 34). Several interventions are proposed to target women in highly vulnerable situations, including: 1. Empowerment of women through access to microfinance to diversify earning potential, 2. Ensuring easier access to water and energy sources by drilling boreholes and planting trees in woodlots, and 3. Use of electricity provided through the rural electrification program (p. xi).
	Nepal	As a criterion to select priority adaptation activities, people's participation is listed, with an element being inclusiveness, specifically of gender, indigenous and Dalit communities (p. 20).
	Samoa	Gender equality is identified in the Local & Community-based category as a Tier-2 criterion for prioritization (p. 21).
	Sierra Leone	Raise public awareness and mainstream gender perspective into climate change issues identified as third priority in the Meteorology Sector (p. 32).
	Solomon Islands	Gender equity is one criterion to select adaptation options (p. 68).
	Somalia	As a guiding principle of gender equality, the document states "Throughout the Somalia NAPA process, the active participation of women, youth, and representatives of communities and marginalized groups was pursued" (p. 56).
	Sudan	Empowerment of women is a criterion used to evaluate adaptation projects in ecological zones (p. 13).
	Timor-Leste	Addressing gender equality is included as a criterion for ranking at country and community level (p. 41). Results of ranking activities are included in table format (p. 42).
	Tuvalu	A gender balance was encouraged throughout the NAPA development process (p. 13).
	Uganda	NAPA preparation was guided by MDG's, including gender equity as a commitment (p. xiii). Equity and gender issues considered a first tier criterion at the national level for identification of priorities (p. 19).
	Zambia	NAPA guided by MDGs, including promotion of gender equality and women's empowerment (p. 2)

Table 4-5: Women's empowerment as a priority project selection criteria

C. Women's Participation

Women are important members of any community. They are holders of valuable information about the community and natural resources (Shiva, 1988). As women are often the primary natural resource users, they may be the first to feel the effects of

climate change and have valuable information about the changes and potential adaptation strategies (Dankelman, 2002). Lorena Aguilar (2010) describes just how valuable women's voices are by stating that:

Women are not just helpless victims of climate change—women are powerful agents of change and their leadership is critical. Women can help or hinder strategies that deal with issues such as energy consumption, deforestation, burning of vegetation, population, and economic growth, development of scientific research and technologies, and policy-making, among many others (p. 174).

Given the importance of women as primary users of natural resources, it is essential that their ideas be given serious consideration in the development of adaptation policy and practices. Participation, in this chapter, is addressed in three ways: participation by women as individuals, participation by women's organizations (institutional), and participation by representatives of women's needs (including gender specialists and task force participants).

i. Participation by Women as Individuals: It is important for women to participate in planning processes in order to have a voice (UN Gender Mainstreaming, 2002). Only 19 NAPAs (39 percent) state that women participated in the NAPA development and consultative process, many specifically referring to urban and rural women from local communities. Of the 19 countries that state that women participated, many only state that women were consulted during the process without giving specific details about the type of participation and what was learned from them. Twenty-seven countries have specific information about how women participated, and these are divided into three categories in the following tables. Table 4-6 includes contents of the NAPAs that state the specifics of women as individuals who participated in the NAPA process.

Participation by women as individuals	Bangladesh	Indigenous women mentioned as stakeholders and participants in the NAPA development process (Executive Summary). Women identified as participants in workshops to solicit people's perceptions of impacts and vulnerabilities to climate change (p. 16).
	Benin	Women and men should be included in the workshops as they are holders of knowledge of vulnerabilities and adaptation strategies (p. 35).
	Central African Republic	Men and women from communities participated in the process (p. 19).
	Gambia	Gender listed as criteria for selecting community contributors in the process (p. 89).
	Kiribati	Women were consulted in the process and a working group made provision that women would be included in a subgroup for participation. Women were included in a subgroup with youths (p. 33) that included younger men (OCHA, p. 4).
	Nepal	As a criterion to select priority adaptation activities, people's participation is listed, with an element being inclusiveness, specifically of gender, indigenous and Dalit communities (p. 20). Mother groups are listed as local service delivery agents to implement projects at the local level (p. 23).
	Rwanda	Women's groups were included in local community consultations, and in the four phases of NAPA (p. 15).
	Samoa	Their community participatory approach includes local communities consisting of both women and men who are the most vulnerable. Among three main inter-related social groups that are the key groups/participants in the participatory approach, women's committees or councils are included as one of three (p. 58).
	Sao Tome and Principe	Women and men of the poor areas of the country were consulted (p. 25). The community groups consulted included more than 30% women (p. 29).
	Solomon Islands	In community consultations, it is stated that often, just as many women participated as men. Special attention was given to women and young people to gain their input (p. 62).
	Somalia	As a guiding principle of gender equality, the document states "Throughout the Somalia NAPA process, the active participation of women, youth, and representatives of communities and marginalized groups was pursued" (p. 56).
	Timor-Leste	The active participation of women and marginalized groups was pursued both at the central and district level (p. 48).

Table 4-6: Participation by women as individuals

Decision makers may find these examples useful in order to identify how women should be included to participate and how the NAPAs can be more clear concerning the commitment towards women's inclusion and participation.

ii. Participation by Women's Organizations: While it is important to have women at the local level involved, it is also crucial to have women from government agencies and women's groups included in the process. While involving women will not necessarily mean that women's views will be represented in the final document, it is a starting point. Eleven countries (22 percent) mention that a government agency addressed women's needs or that specific women's groups were included in their process. The only notable contribution regarding the inclusion of women's groups and government agencies comes from Afghanistan, who distributed questionnaires to the department of women's affairs at

national and provincial levels (p. 72). Other inclusions regarding participation by women's organizations did not include any specifics. The details regarding these inclusions can be found in Table 4-7.

Participation of women's organizations	Afghanistan	The Ministry of Women's Affairs was invited to participate, but declined. (p. 72) Questionnaires were distributed to Ministry/Department of Women's Affairs at national and provincial levels (p. 72).
	Bhutan	National Women's Association of Bhutan had representation in the Health Working Group (p. i).
	Cambodia	Women associations are included as stakeholders in malaria project (human health sectors). (p. 77).
	Gambia	Women in Service Development Organization and Management is mentioned on the contributors' list (p. iii).
	Lesotho	Women's groups are among stakeholders (p. 47).
	Liberia	Assistant Minister for the Ministry of Gender and Development listed as contributor (p. viii). Ministry of Gender and Development listed as stakeholder (p. 16).
	Mauritania	Women's Affairs Focal Point is part of the implementation committee (p. 77).
	Niger	Women included with actors and stakeholders to set up task forces (p. 71).
	Rwanda	Women's associations were consulted in the process (p. 7). Women's groups were included in local community consultations, and in the four phases of NAPA (p. 15).
	Samoa	Ministry of Women, Community & Social Development included in contributors list (p. 2).
	Solomon Islands	National Council of Women made contributions to the report (p. 107).
	Somalia	Women's organizations present in consultative workshops (p. 79, 80, 83).
	Sudan	Women's groups identified as stakeholder consulted in NAPA process (p. 12).
	Tanzania	Women's groups are participants in reforestation project (p. 45).
	Vanuatu	An example of a woman's group successful adaptation project is presented (p. 36).
	Zambia	Gender and Development-Cabinet Office included in list of stakeholders (p. 35). Women's organization included in list of stakeholders (p. 35). Women's groups participating in consultation for project three (p. 49).

Table 4-7: Participation by women's organizations

Afghanistan is a notable case in their inclusion of women's needs in their NAPA as their NAPA particularly states that some of the issues that they have had in regards to gender inclusion are due to their socio-cultural constraints on women. Firstly, the Ministry of Women's Affairs was invited to participate, but declined (p. 72). No reason was given for this and this is the only country where a candid statement is made about a

ministry not participating. The NAPA stated that women did not participate in regional workshops, since cultural constraints prohibit women from attending public events with men (p. 72). Afghanistan has severe gender inequalities, like many other LDCs, but Afghanistan is the only country that addresses these in their NAPAs. In order to promote gender equality, it is important to be upfront about cultural constraints so that areas in the process can be addressed and changed. Additionally, despite the fact that there was a strong desire to encourage women to participate in the meeting and discussion program of the NAPA, women and representatives of women could not join them. This is not the fault of the process, but an element of the culture. Due to Afghanistan's unique gender inequalities, they have been selected for further research and discussion in Chapter Five of this dissertation. Understanding cultural aspects of gender inequality is particularly important at the international level, so that guidelines to promote gender mainstreaming in NAPAs can be modified to accommodate these limitations.

iii. Participation by Representatives of Women: Participation by representatives of women provides a significant contribution to the NAPAs. In order to assess how representatives of women are included in the NAPA, I look for the inclusion of gender specialists and task force participants among the contributors. While there are few NAPAs that have participation by representatives of women, this category is important since these representatives often hold advanced knowledge about gender relations within their country. They often understand women's experiences by working with local women, as well as have a theoretical knowledge of gender relations and how the history of their country has impacted current gender roles and relationships.

Participation by representatives of women (including gender specialists and/or task force participants).	Benin	Mention of a gender specialist (p. 65).
	Bhutan	11 of 39 task force members are women (OCHA, p. 1).
	Burkina Faso	Women were involved in the process. A team of experts also took into account the gender aspect (p. 18).
	Chad	Consultations in each region were conducted and included representatives of women, among other groups (p. b).
	Djibouti	A representative from a women's group was involved in the process (p. 7).
	Nepal	Experts in relevant fields, including gender and social inclusion, will provide technical support to local delivery agents at the development region or watershed level (p. 22). The NAPA has an assigned consultant for the crosscutting theme of Gender and Social Inclusion (p. xiv).
	Timor-Leste	A gender specialist is included in the list of contributors (p. 76). Two women's representatives were listed in the consultation list (p. 79).
	Tuvalu	A generational and gender representation was balanced in stakeholder workshops (p. 11).

Table 4-8: Participation by representatives of women

Many of the countries separated their NAPA into sectoral working groups to divide the work. Of these sectoral working groups, only two countries have a working group to specifically address women's needs: Bangladesh and Bhutan. Nepal has a "cross-cutting thematic group" for gender and social inclusion discussed in detail in Chapter Six. Additionally, four countries identified a gender specialist for the NAPA: Benin, Burkina Faso, Nepal, and Timor-Leste.

Although these four countries have a gender specialist contributing to the NAPA processes, their NAPAs are varied in regard to gender sensitivity. Benin, for example, does not mention any vulnerabilities differentiated by gender and does not make a general statement concerning women and adaptation. Although it does include one project that specifically targets women, it does not include women's empowerment as a selection criterion. The NAPA does include participation by women as individuals and participation by representatives of women, but does not include participation by women's organizations.

Burkina Faso's NAPA mentions that female farmers and pregnant women are vulnerable to climate change but does not mention any other gendered vulnerabilities to climate change. The NAPA gives a general statement concerning women and adaptation, stating that women were given attention in the preparation of NAPA due to their obvious vulnerabilities to climate change (p. 29). The NAPA does not have any projects specifically targeting women, but does include women's empowerment as a selection criterion. The NAPA indicates that there was participation by representatives of women, but does not address participation by women as individuals or participation of women's organizations.

Nepal's NAPA addresses women's vulnerabilities to climate change in all four vulnerability sectors assessed and makes a general statement concerning women and adaptation. The NAPA does not include a project specifically targeting women, but does include women's empowerment as a priority project selection criterion. Nepal's NAPA includes participation by women as individuals and participation by representatives of women, but does not include participation by women's organizations.

Timor-Leste's NAPA does not address gendered vulnerabilities to climate change, but does include a general statement concerning women and adaptation. The NAPA does not include any projects that specifically target women, but does include women's empowerment as a priority project selection criterion. Timor-Leste's NAPA includes participation by women as individuals and representatives of women, but does not include participation by women's organizations. The diversity of the inclusions regarding women and gender by the four countries with gender specialists as contributors to their

NAPA illustrates that the gender sensitivity of each countries NAPA is based upon multiple factors and that having a gender specialist does not guarantee that gender will be addressed in all analyzed categories.

To further understand how gender sensitivity is based upon multiple factors, we look at the NAPAs from Liberia and Djibouti. Each country has incorporated participation by women's organizations and representatives of women, but both countries' NAPAs are completely gender blind, meaning that there is no mention of women and or gender, and there are no indicators that women's adaptive capacity is being addressed or considered. This gender blindness might to some extent be related to the fact that women and gender expertise involved in these high-level processes are often women from the urban elite, who do not necessarily understand the impacts in rural settings, which tend to be more heavily affected by climate change (Denton, 2004; Holvoet & Inberg, 2013). Individuals in rural settings are often affected by climate change differently than in urban centers, as they have less access to regulated water supplies and rely heavily on resources found locally, while individuals living in urban centers may have access to water supplies regulated by government agencies or the ability to buy bottled water due to access and proximity (while rural individuals may not have accessibility to bottled water without traveling many miles). Additionally, rural dwellers may live a subsistence lifestyle, which is easily impacted by climate change, while urban dwellers may have access to food markets being supplied by different geographic areas (so if one area is affected by drought or floods, the market will be supplied with food from other regions). Even though urban-dwellers may benefit from

having access to water supplies and regionally sourced markets, there are vast and increasing numbers of urban slum districts with little or no access to these resources, both physically and financially. Given this, there are challenges to both rural and urban communities, and often women and gender experts who support high-level government processes that create national climate policies are elite individuals, and so they may not understand the issues that climate change will bring to the poor and may not fully understand the gendered vulnerabilities of different social classes. Using Liberia and Djibouti as examples, it becomes more evident that participation does not necessarily mean that NAPAs will be gender sensitive and there are many factors that contribute to gender inclusions in adaptation plans.

Niger offers another illustration of the multiple factors that contribute to gender sensitive policies. Niger has a very high rate of gender inequality, with a score of 0.707 on the GII, but Niger's NAPA incorporates many of the categories that are discussed in this chapter; it addresses gendered vulnerabilities in regard to agriculture and food security and also includes a general statement concerning women and adaptation. Niger's NAPA has two (out of six total NAPA projects) that specifically target women, although it does not indicate that women's empowerment is a priority project selection criterion. It also includes participation of women's organizations, but does not include women as individuals or participation by representatives of women. Although Niger faces many gender inequalities, their NAPA reflects an overall commitment to improving conditions by incorporating many of the categories analyzed in this chapter. To further understand the factors that contribute to a NAPA that is gender sensitive and inclusive, Chapter Five

of this dissertation will take a more thorough look at four countries, their NAPAs and country conditions that influence the policy development.

V. Synthesis

This chapter has organized and analyzed the NAPA documents from 49 countries to compare three categories commonly associated with gender analysis for adaptations strategies. Bringing these issues to the forefront, and organizing entries from 49 NAPAs, I have gained some insights into the NAPA process. Firstly, most NAPAs recognize that vulnerabilities to climate change are differentiated by gender and some recognize that women are a marginalized group. This should provide the groundwork within the NAPA for further inclusions and understanding of women's needs to adapt to climate change. This should also provide the foundation so that the projects and programs proposed by the NAPAs can address gendered vulnerabilities and seek to increase adaptive capacity. This does not appear to be the case, as only six projects (one percent) specifically target women and 59 projects (10 percent) mention women and/or gender at all. This brings up many questions as to why women's issues are not addressed more precisely and why some countries address gender and others do not. For example, Niger and Afghanistan are very poor, with dramatic violence, low HDI, high GII, few exports, and little industry. Yes, against these disadvantages, they attend to gender issues within their NAPAs.

Despite more than four decades of discussing gender inclusion, as well as 20 years since the UN has fully supported gender mainstreaming, it seems that most policy documents, including NAPAs, only provide token service to the issue. A study published in 2005 by Hilary Charlesworth revealed the limited impacts of gender mainstreaming

practices in the United Nations. Charlesworth states that “although it has not been difficult to encourage the adoption of the vocabulary of mainstreaming, there is little evidence of monitoring follow-up” (2005, p. 11). In the ten years since her study, I find that the same critiques of gender mainstreaming are still relevant in the NAPAs. Charlesworth states that a consistent problem for all the organizations that have adopted gender mainstreaming is the translation of the commitment into action. This appears to be the case in NAPAs, as well. This chapter has identified that many countries have included basic language that addresses gender issues in relation to climate adaptation, but very few projects (which is where implementation processes will be focused) have included ways to mainstream gender and reduce women’s vulnerabilities and inequalities. While there are many studies that discuss the disconnect between general talk about gender and action (Alston, 2014; Charlesworth, 2005; Walby, 2005), there are fewer studies (if any) that attempt to identify particular areas in the decision-making process where gender mainstreaming has not been applied.

When gender is included in the NAPAs, it mostly deals with the identification of vulnerabilities differentiated by gender and on how women and women’s representatives participated in the process of gathering information and development of the NAPA. There is less focus in the NAPAs on gender equality programming, which is the process of identification of priority projects that address gender inequalities. All funding for NAPAs will be to address priority projects and when women’s needs are not addressed in the priority projects, the funding will not be used to improve their adaptive capacity and

livelihoods, even though women are often the most vulnerable to climate change and are in need of funded projects the most.

This chapter has shed light upon the NAPA process in three ways. Firstly, the comparison of the components of 49 NAPAs shows how each country has addressed the gender dimensions of climate adaptation. Almost all the NAPAs acknowledge the immediate and dangerous impacts of climate change on health, water, sanitation, food security, land security and even literacy and education rates, and many specify that women are among the most vulnerable in these situations. Fewer NAPAs look at how these relate specifically to women's economic, political, and social status. Very few NAPAs address gendered vulnerabilities in their priority project identification and only six projects (out of 557 total projects for 49 countries) specifically target women. Digging deeper into implementation aspects of the NAPA projects may show that gender is addressed without it being specifically stated in the NAPA, but there are important reasons why it should be included in the policy document.

Secondly, we are learning that there are many factors that contribute to the gender sensitivity of a NAPA. Without further analysis of particular country conditions, we cannot conclude that countries with stronger gender inequalities address the gender dimensions of climate change any differently than countries with less severe gender inequalities. We also cannot conclude that countries that state gender differentiated vulnerabilities in their NAPA will be more likely to address these in their priority project proposals. There are many factors that contribute to the gender sensitivity of a country's

NAPA, and further research is needed to understand what these factors are and how they relate to policy.

Lastly, this analysis has illustrated the importance of continued research on the gender dimensions of climate adaptation policy. As women face considerable challenges to climate change and policy making processes continue to be male-biased, it is especially important to understand how information about gender inequalities are assessed and accessed by policy makers and transferred into policies. In the two remaining research chapters of this dissertation I take a closer look at the factors that lead to incorporating gender issues within climate adaptation policies and I draw conclusions about how to reduce gendered vulnerabilities and what steps decision-makers can take to incorporate women's needs within their policies. This chapter has highlighted the gender dimensions of NAPAs by describing how each country addresses the gendered dimensions of climate change and how complex the factors are that lead to gender sensitive policies. The following chapters will dig deeper in policy-processes to assess how gendered vulnerabilities are addressed and show variations in how NAPAs seek to reduce these vulnerabilities.

CHAPTER 5

GENDER SENSITIVITY AND NAPAS: LESSONS LEARNED FROM AFGHANISTAN, BANGLADESH, MALDIVES AND NIGER

I. Introduction

As research continues to reveal that possible consequences of climate change will not be uniformly distributed across society and women will be affected in different ways than men (Agarwal et al., 2014; Dankelman & Davidson, 2010; Denton, 2002), NAPAs are designed to provide Least Developed Countries (LDCs) the ability to identify priority activities that respond to their urgent and immediate needs to adapt to climate change. As discussed in Chapter Four, the impacts of climate change are gendered and so too should the adaptation strategies proposed in the NAPA. This chapter will seek to understand if NAPAs are meeting the country specific gender differentiated needs to adapt to climate change, how women help societies adapt to climate change, and how women's increasingly important role in climate change adaptation could potentially elevate their status in society.

In Chapter Four, I analyzed 49 NAPAs in regard to their gender dimensions using three indicators: vulnerability, gender equality programming, and participation. Chapter Five takes a closer look at four countries: Afghanistan, Bangladesh, Maldives and Niger. More specifically, I analyze the sensitivity of the NAPA from these countries to factors that make women more vulnerable to climate change. I also look at how these countries have addressed existing inequalities in light of the current status of women in the country. These countries were chosen based on geography, HDI, GII, and notable gender

contributions in their NAPA identified in Chapter Four. Further justification for the selection of these countries is found in the methods section of this chapter.

Following Denton (2002), I argue that climate adaptation policies, if designed appropriately, can provide a unique opportunity to challenge and change gender inequalities in society. For example, women and girls have less access to and control over resources and have fewer skills than men, and these inequalities undermine their capacity to adapt to existing and predicted impacts of climate change, and restrict their ability to contribute important knowledge and insights to adaptation decision-making processes (Demetriades & Esplen, 2008). The situation is exacerbated by the fact that climate change also reinforces existing gender inequalities in the dimensions that are most critical for coping with climate-related change, which include inequalities in access to wealth, new technologies, education, information, and other resources, such as land (Demetriades & Esplen, 2008). If NAPAs fail to address gender dimensions of climate adaptation in the document, climate adaptation may increase inequalities for women (Hemmati & Rohr, 2007). Examples from disaster literatures illustrate that policies can simultaneously improve the overall status of women while addressing the main focus of the policy.

The ability to reduce gender inequalities through climate change related events has been highlighted in natural disaster literature and described by Enarson (2000). In responding to disasters, Enarson discusses how women have been willing and able to take on active roles in what are traditionally male tasks. Women have proved effective in mobilizing the community to respond to disasters, in disaster preparedness, and mitigation. This study and studies like it illustrate that women can take active roles in

response to natural disasters and improve their overall status in the country (Campbell et al., 2009; Goh, 2012; Resurreccion, 2011). The literature on women's involvement in natural disasters strongly suggests that women can play an active role in climate adaptation, which may also increase their overall status in the country. Women have demonstrated that they are willing and able to take on traditional male roles, and this knowledge can be used in adaptation policies so that women's abilities will be utilized. By preparing for women to be active in climate adaptation strategies, NAPAs can reduce socially constructed gender inequalities while adapting to climate change.

Despite women's important roles in disaster risk reduction, agriculture, and household food security, women in developing countries have yet to become major players in decision processes (Neefies & Nelson, 2010). In this chapter I argue that excluding women in the processes of formulating NAPA, a crucial policy document to guide climate adaptation in the future, can exacerbate gender inequalities and decision-makers are missing an important opportunity to reduce women's vulnerabilities.

II. Methods

As previously stated, this chapter analyzes the NAPAs of four LDCs: Afghanistan, Bangladesh, Maldives, and Niger. These countries are selected based on HDI, GII, geography, and some notable contributions following the content analysis conducted for Chapter Four. The HDI is used to determine the overall development of the country and the GII to classify the country's gender inequalities (further details on HDI and GII can be found in Chapter Three). Additionally, it is important for my analysis to have a country from each of the three geographic regions studied: Africa, Asia, and

Island Nations. Firstly, I wanted to select two countries that have a high HDI (compared to the other LDCs). These countries are Bangladesh and Maldives. The HDI reflects the development of the country, and a high HDI means that they have moved further towards what the literature refers to as development. Additionally, Bangladesh is in Asia, and has a high GII score (more gender inequalities) and the Maldives is an Island Nation and has a low GII score (fewer gender inequalities), which provides variation in gender inequalities and geography.

In addition to two countries with high HDI ratings, I selected two countries that rated very low on HDI. These countries are Afghanistan, with an HDI of 0.374, and Niger, with an HDI of 0.304. Additionally, these countries ranked very low in GII, with scores of 0.712 and 0.707, respectively. These scores rank Afghanistan's GII at 147th out of 148 countries and Niger's GII at 146th (demonstrating greater gender inequalities). Additionally, these countries fit the geographic requirements, as Afghanistan is in the Middle East (Asia) and Niger is in Africa, providing regional differentiation and covering the main regions that LDCs fall within (Table 5-1).

This chapter is divided into four country profiles, with each profile consisting of the following sections: basic country information including geography, current and projected climate changes and major economic activities in the country, followed by an overview of gender inequalities and gender discussions within the NAPA. The last section of each country profile includes data collected in Chapter Four of this dissertation, and any other mention of women or gender in the country's NAPA that may not have fit within the parameters of Chapter Four's analysis. Women mainly are

discussed in the guiding elements, participation, and vulnerability sections of the NAPA, and are organized in these categories in each of the country profiles. This data was collected primarily from the NAPAs, but additional information was found in peer-reviewed journal articles and INGO websites. Following a discussion of the gender dimensions discussed in the NAPAs, a general overview of gender inequalities in the country is provided. It is important to understand the overall gender inequalities in each country in order to place the inclusion of gender in the NAPA into specific context.

From this data, an analysis of each country is provided. This material is linked directly with the vulnerabilities that women face to climate change, and how each country seeks to address these vulnerabilities. Additionally, I seek to identify indicators of a NAPA's sensitivity. Indicators in this regard are factors that one can see that will indicate how gender sensitive a country's NAPA will be. This is an important aspect of this chapter, as indicators would shorten a researcher's time in identifying NAPAs that are insensitive to gender. If there are indicators that help to identify NAPAs with minimal gender inclusion, then researchers could select these countries quickly and provide additional gender training and instructions in order to address their lack of gender sensitivity. Additionally, I seek to understand if GII is an indicator of gender sensitivity in NAPAs. Given that a lower GII indicates a country with fewer gender inequalities and arguably a country that is working toward a more gender equal society, I assume that these countries will have a greater inclusion of women's vulnerabilities and needs with regard to climate change vulnerability and that decision-makers will be more sensitive towards gender equality issues within the country.

Given the connections between GII and women's needs to adapt (discussed in Chapter Three), it should be apparent that countries that have higher GII ratings (more gender inequalities) will have less input and fewer contributions regarding gender inequities in adapting to climate change, while those with lower GII ratings (fewer gender inequalities) will have a greater commitment to gender equality. Despite the theoretical associations between these two factors, in actuality there may not be such a clear linkage. The following sections will seek to understand a relationship between GII and gender equality in the NAPAs. A summary of key characteristics of the selected countries is found in Table 5-1.

Country	Region	HDI	GI	GI Rank	MMR	AFR	SNP	LFPR
Afghanistan	Asia	0.374	0.712	147	460	99.6	27.6	15.7
Bangladesh	Asia	0.515	0.518	111	240	68.2	19.7	57.2
Maldives	Island Nation	0.688	0.357	64	60	10.2	6.5	55.7
Niger	Africa	0.304	0.707	146	590	193.6	13.3	39.9

Table 5-1: Summary of key characteristics of selected countries.
(Source: UNDP, 2013)

HDI: Human Development Index (2012)

GI: Gender Inequality Index (2012)

GI Rank: Rank among 148 countries (2012)

MMR: Maternal Mortality Ratio (2010)

AFR: Adolescent Fertility Rate (2010)

SNP: Seats in National Parliament- Female (%) (2012)

LFPR: Labor Force Participation Rate-Female (5) (2011)

The remainder of this chapter provides the background and relevant literature in order to understand the country specific dynamics that could influence the gender sensitivity of its NAPA. The following sections are separated by country and a synthesis is included at the end in order to analyze, summarize, and compare the data from each country.

III. Afghanistan

Afghanistan, officially the Islamic Republic of Afghanistan, is a landlocked country located in Central/ South Asia and is a part of the Greater Middle East. It has a population of 30 million, with 80 percent of the country Sunni Muslim and 19 percent Shia Muslim. According to the UN, 23.5 percent of the population is urban.

As an arid country, Afghanistan's sensitivity to climate change varies substantially from one region to another due to dramatic changes in topography (NEPA, 2009). Afghanistan has a continental climate with very harsh winters in the central highlands, a glaciated northeast, and extreme hot summers in the low-lying areas of the southwest, the east, and the plains in the north (NEPA, 2009). Aside from rainfall, Afghanistan receives most precipitation from snow in the winter and early spring. The melting snow in the spring season enters the rivers, lakes, and streams, and despite having numerous rivers and reservoirs, large parts of the country are dry; the Sistan Basin is one of the driest regions in the world. The long period of summer drought limits Afghanistan's vegetation, as the winter snows provide moisture during the spring and early summer and this source of moisture is not available thereafter (NEPA, 2009).

Afghanistan is an agriculture-based economy, but only a relatively small portion of land area, approximately 12 percent, is suitable for arable farming or horticulture (irrigated and rain-fed). With the increasing population and the return of refugees, the agriculture resource base is under considerable stress. Agriculture is impacted by land degradation, water scarcity, deforestation, and threats to biodiversity, and the stress on agriculture will have increasing impact as climate change continues to worsen (Fischer et

al., 2002). This can have drastic impacts on the already poor and marginalized people of Afghanistan.

With one of the highest population growth rates in Asia, together with returning refugees, extreme levels of poverty, ongoing conflict and low human and institutional resource capacities, Afghanistan represents one of the greatest development challenges in the world today. The multiple pressures on the environment are resulting in unsustainable natural resource use and severe degradation of the natural resource base.

Climate data and information on Afghanistan is “scanty, sparse and not well documented” (NEPA, 2009, p. 65). Key climate hazards in Afghanistan are identified in the NAPA and include periodic drought, floods due to untimely and heavy rainfall, flooding due to thawing of snow and ice, increased temperatures, frost and cold spells, and 120-day winds (winds during the summer months that typically accompany extreme heat, drought, and sandstorms that bring hardship to desert inhabitants). The NAPA indicates that droughts, floods, and rising temperatures present the greatest hazards to ecosystem services and livelihood activities in Afghanistan.

A. Overview of Gender in Afghanistan’s NAPA

Given Afghanistan’s high rating on the GII (0.712) and their historic gender inequalities, it is no surprise that their NAPA has very little mention of the gender dimensions of adaptation. The NAPA mentions women and/or gender four times within the document. The first time women and/or gender are mentioned in the document states that there are gender differences in literacy and life expectancy. The document states that 12.6 percent of women are literate compared to 32.4 percent of men, and that from 2001

to 2004, life expectancy has increased from 45 to 47 years for men, and 44 to 45 for women (NEPA, 2009). This is the first mention of women and the remaining three are discussed below.

i. Participation: Gender is briefly mentioned with regards to women's participation. The NAPA states that,

Although the Ministry of Women's Affairs was invited to participate in CCPD-WG, they declined to participate. Furthermore, given the cultural constraints associated with involving women in public events with a high male presence, they did not participate in the regional workshops. NCSA [National Capacity Needs Self-Assessment for Global Environmental Management] questionnaires were distributed to and completed by the Ministry/Department of Women's Affairs at national and provincial levels for completion and return to UNEP (Afghanistan NAPA, p. 72).

Despite the very limited inclusion of women, the NAPA is transparent in stating that women's participation is limited instead of leaving it out completely. Instead of addressing women's participation in this way, other NAPAs leave out any challenges to women's inclusion. Additionally, it is not clear if the Ministry/Department of Women's Affairs returned the questionnaires to UNEP, even though they were instructed to do so. There is no mention of any information that was learned or utilized from the questionnaires.

ii. Vulnerability: The third mention of gender is when the NAPA describes women as more vulnerable to climate change than men:

Although it is possible to make some general observations concerning the impacts of climate change within the household, the most vulnerable members and the degree of the impact vary according to ethnic group. Generally speaking, however, women are extremely vulnerable given their general immobility and dependence upon the male members of the household (this being an issue that extends well beyond climate change). It has been noted that, during periods of drought, young women and children [are] sold into marriage so that their families can afford to eat. Children are also highly vulnerable to climate change, given that they are widely responsible for realizing small scale livestock herding and collection of firewood (NEPA, 2009, p. 74).

Although the NAPA highlights that women are the most vulnerable to climate change, there is no other mention of women's vulnerabilities, especially specific vulnerabilities particular to Afghanistan or regions within the country, nor are there any solutions or projects designed to improve women's adaptive capacity to climate change. The fact that women and children will be sold into marriage during periods of drought shows a negative consequence of climate change that is possible only because women have such a weak position in society. This illustrates the extreme need for adaptation projects that reduce women's vulnerabilities so that families are not so desperate for food that they must sell their children. There are many abuses that accompany child marriages and there are lasting consequences in health, education, and social development for child brides (Kandiyoti et al., 2005). If women's status improved in Afghanistan, they might have the ability to propose and enact alternative adaptation strategies and, through their greater power and enhanced statuses, would be able to substitute good adaptations for abusive ones. Adaptation strategies and projects can improve the overall lives of many people in Afghanistan, and a commitment to adaptation in extreme weather conditions, such as drought, is essential to improving human development and gender inequalities in the country.

iii. Gender Equality Programming: The last mention of women or gender in Afghanistan's NAPA is the inclusion of gender as a potential barrier to implementation of the NAPA and its projects. The NAPA states that

Potential barriers to implementation: limited resources, as funds of donor partners are currently overstretched addressing other priority issues that include security, health, education, gender, conflict resolution and agricultural development, amongst others (NEPA, 2009, p. 77).

As previously discussed, addressing climate change and climate adaptation has the potential to also address many of the priority issues described in Afghanistan's NAPA. Mainstreaming is the tool used to incorporate issues within other issues to solve problems holistically and enable policies and projects to function in multiple ways by improving human development (Walby, 2005). By incorporating many of the identified priority issues within the NAPA (or mainstreaming adaptation priorities within other policies and projects) each country can address many of these issues together (Enarson, 2000). Additionally, for the NAPA to be most effective, despite its ability to gather funding, it should address all of these major development activities and issues within the documentation to further advance mainstreaming efforts.

B. Gender Inequalities

According to Smeal (2001), gender inequalities have not always been so pronounced in Afghanistan. Prior to the gender apartheid instituted by the Taliban beginning in 1996, large numbers of Afghan women in urban centers participated in the workforce and in public life. Afghanistan's Constitution, written in 1964, even ensured basic rights for women such as universal suffrage and equal pay. Since the 1950s, girls in Kabul and other cities attended schools. Half of university students were women, and

women made up 40 percent of Afghanistan's doctors, 70 percent of its teachers, and 30 percent of its civil servants. A few women held important political jobs as members of Parliament and judges and most women did not wear the burqa. Many devout Muslim women wore headscarves and long dresses, but not the burqa (Smeal, 2001). According to Marsden (1998), since the fall of the Taliban government in 2001, major improvements have been made for women in Afghanistan. Under the Taliban, there were four central policies regarding women that were implemented. First, women were forbidden to hold jobs. Second, they could not attend schools until the Taliban had come up with a curriculum appropriate for their primary role of bringing up the next generation of Muslims. Third, women were forced to wear burqas, while men had to wear long tunics and pants, maintain beards, and were not permitted to style their hair. Finally, women were denied freedom of movement. They could only leave their homes if escorted by male relatives and had to avoid contact with male strangers (Marsden, 1998). If these rules were transgressed, the religious police would issue punishments such as public beatings and sometimes death (Stabile & Kumar, 2005). Despite these violations of women's rights, the US supported the Taliban due to US efforts to secure a contract for an oil pipeline through Afghanistan that would enable access to Caspian Sea oil (Rashid, 2000). After the removal of the Taliban regime from Afghanistan, a new government was formed. The Karzai administration had relaxed policies around women's rights, and in Kabul women could be seen driving cars and engaging in other activities that would have been previously prohibited (Rubin, 2010). Despite improvements in women's rights post Taliban, in March 2012 President Hamid Karzai endorsed a "code of conduct" in which

some of the rules state that women should not travel without a male guardian and should not mingle with strange men in places such as schools, markets and offices (Associated Press, 2012). The endorsement of the code of conduct is seen as endangering hard won progress on women's rights since the Taliban fell from power. The extreme violations of women's rights, coupled with conflicting and changing rules placed upon women, make it challenging for decision-makers and policy-writers to incorporate any gender equality dimensions without fear of retribution. Previous efforts to reduce women's inequalities demonstrate that there is support for women's rights in the country, and that with the right combination of support and government approval women's vulnerabilities can be reduced and the overall status of women in the country can be improved.

Gender equality plays an important role in the differentiated impacts of climate change. The following examples show that gender inequality will make adapting to climate change a challenge for women. In regard to labor, women receive less pay than male counterparts, ranging from 20-50% less in Afghanistan, which puts them again at a disadvantage when it comes to financial resources, which can act as safeguards to cope with climate change and natural disasters (FAO, 2010a). Women's lack of ability to drive makes it harder for them to gather supplies that they need, making them reliant on men to drive (adjusting to the man's schedule, men's willingness to help, etc.) or women must walk, which increases the time to accomplish the task and reduces their time for other adaptation and livelihood activities. Cultural constraints limit women's ability to communicate with others, which restricts their ability to learn coping and adaptation strategies and their ability to gather information about potential climate impacts.

Given these gender inequalities in Afghanistan, it is apparent why there is a lack of gender inclusion within the NAPA document and processes. The lack of participation by women in the NAPA process and within government sectors in general, due to cultural and social constraints, most likely limits the policy's ability to be gender sensitive. While it is not surprising that Afghanistan's NAPA doesn't focus on reducing gender inequalities, it is unique that the NAPA mentions these socially constructed gender inequalities and implies that these gender inequalities have hindered the policy-makers ability to include women and their perspectives, instead of trying to hide this fact.

C. Discussion

From the previous chapter, we see that Afghanistan's NAPA does not address gender in the three categories analyzed, but does mention gender four times, and discusses the cultural constraints to including women and accommodating for their needs in the policy. It seems that there is an effort to understand the gender dimensions of climate change, as the NAPA mentions at least one aspect of women's vulnerability (unlike 25 other NAPAs that do not mention any gender differentiated vulnerabilities). Additionally, the discussion of women's participation demonstrates an understanding of the importance of having women's input, although it falls short in incorporating women's views from different perspectives. There is an effort to understand gender inequality, but there is a lack of contributions from and for women. There aren't any project proposals that address women's needs, and there is no information about ways to build gender equality through implementation activities. One reason for this is due to unsettled and often changing political views on women. After the Taliban fell in 2001, there were

improvements towards women but President Hamid Karzai hindered many of these improvements in 2012 (English, 2014; Zaki & Shedenova, 2014). These changes may make it hard for decision-makers to incorporate gender equality into policies, and there may be backlash for individuals who promote gender equality within the country and government processes. Therefore, it would be challenging for Afghanistan's policy-makers to incorporate gender equality efforts in many policies, such as NAPAs, without having a more stable government that promotes equal rights for women.

Women's inability to work and to deal with men in Afghanistan effectively blocks the path toward gender equality and their ability to enact adaptation strategies that have less abusive consequences. The coping mechanism of selling women and children when there are few resources available is an important example of diminished women's status caused by their already weakened role in society. Instead, societies like Afghanistan could benefit from women's input in climate adaptation as well as an elevated role in society. Women are a vital resource, with their talents, energy, and ingenuity, as well as their unique connections with the environment, and can be essential elements to help the country understand the emerging and hard to predict nature of climate change. An improved status of women can help the country develop towards a more stable society. If Afghanistan does not utilize the vital resources that women offer, they are missing an opportunity to reduce societies vulnerabilities to climate change and are increasing their barriers towards overall country development. We will now look at Bangladesh's NAPA in order to see the gender dimensions of climate change to contextualize the NAPA within that country and to compare it to Afghanistan's NAPA.

IV. Bangladesh

Bangladesh, officially the People's Republic of Bangladesh, is a country in South Asia. With a population of more than 160 million people, Bangladesh is the world's eighth most populous country, and is one of the world's most densely populated countries (MoEF, 2005). According to the UN, Bangladesh is 89.5 percent Muslim, 9.6 percent Hindu, and the population is 28.4 percent urban. Bangladesh has one of the largest river deltas in the world. As deltas typically have a high level of agriculture commodity, climate change can have drastic impacts on the economy and food supply (Adger, 1999). The climate is tropical, with mild winters (October to March), hot, humid summers (March to June), and a warm rainy monsoon season (June to October).

According to the NAPA (2005) there are four environmental stresses critically hindering the development of Bangladesh. These stresses are in the land and soil, water, biodiversity, and disasters. Agriculture land is decreasing rapidly as it has been diverted to other uses, mainly for urbanization and building of human settlements. Additionally, riverbank erosion is rampant in areas along the active river channels (MoEF, 2005). The geographical setting of Bangladesh makes the country vulnerable to natural disasters, including floods, cyclones and storm surge, flash floods, drought, tornados, earthquakes, riverbank erosion, and landslides (MoEF, 2005).

Agriculture, manufacturing industries, and various services such as transportation and trade are the major economic sectors of the country (MoEF, 2005). The HDI score has improved from 0.350 in 1980 to 0.509 in 2002, and 0.515 in 2013 (UNDP, 2013). The progress to the HDI comes from a 14-year increase in life expectancy at birth, 4

additional years of expected schooling, and more than doubling of the gross national income (GNI) per capita (HDR Bangladesh, 2013). Despite its increase in GDP, there is a growing disparity between the rich and the poor. Levels of poverty vary substantially across the country and are strongly correlated with spatial distribution of food insecurity (MoEF, 2005). The disparity between the rich and the poor will most likely relate to a similar disparity in adaptive capacity.

Climate change is expected to have major consequences on agriculture, industry, infrastructure, disaster, health and energy and consequently on people's livelihoods in terms of employment, income and consumption (including food security).

A. Overview of Gender in Bangladesh's NAPA

The NAPA guidelines follow a list of 10 Guiding Elements and gender equality is listed as one of them. The NAPA states that

In conformity with the guiding elements of country-drivenness, simplicity and flexibility in procedures, set in the NAPA Guidelines, poverty reduction and security of livelihoods with a gender perspective has been ranked as the most important set of criteria for prioritization of adaptation needs and activities (MoEF, 2005, p. 23).

The stakeholders at the regional and national workshops have suggested this ranking for criteria used to select priority activities:

1. Impact of climate change on the lives and livelihoods of the communities;
2. Poverty reduction and sustainable income generation of communities;
3. Enhancement of adaptive capacity in terms of skills and capabilities at community & national levels;
4. Gender equality (as a cross-cutting criterion);
5. Enhancement of environmental sustainability;
6. Synergy with national and sectoral plans and programs & other multilateral environmental agreements (MEAs);
7. Cost effectiveness (MoEF, 2005, p. 23).

This ranking highlights the commitment that Bangladesh has taken to ensure that adaptation policies and strategies are aimed at the most vulnerable and those with the lowest adaptive capacity, including women. The NAPA draws upon stakeholder knowledge and background papers prepared by Six Sectoral Working Groups (SWG). One of the sectoral working groups is called Livelihood, Gender, Local Governance and Food Security. Implementing a specific working group to include women shows that a gender perspective was given consideration throughout multiple areas of the NAPA development process in Bangladesh.

i. Participation: The NAPA states that many women, including indigenous women, contributed to the development of the NAPA for Bangladesh (MoEF, 2005, executive summary). The NAPA states that women, among other stakeholders from “various walks of life” joined in workshops to solicit people’s perceptions of impacts and vulnerability to climate variability and change (p. 16). Indigenous women are important holders of local knowledge, and have historically preserved biodiversity and have balanced ecosystems. Promoting indigenous women in workshops at the local, regional, and global levels provides an important perspective to be mainstreamed into climate change plans and policies (Tovar-Restrepo, 2010). It also follows with the gender mainstreaming guidelines outlined in Chapter One (UN Gender Mainstreaming, 2002). Although the NAPA does not define indigenous women, an accepted definition of indigenous refers to individuals that originate in and are characteristics of a particular region or country (Cunningham & Stanley, 2003), therefore, I assume that the NAPA refers to indigenous people as those that are from the country and fall under national legislation jurisdiction

and are not employed by the government or have recently immigrated. Being more specific about participation, the NAPA states that a group of stakeholders involved in the preparation processes from local and regional levels included people from the local government, local level non-government organizations, farmers, and women, and that these local level stakeholders were involved in the regional consultation workshops (MoEF, 2005). It is important to have active participation of gender-balanced indigenous peoples' representation in climate change policy planning processes. By taking into account the UN Declaration of Rights of Indigenous Peoples, national governments like Bangladesh can ensure more efficient implementation of climate change efforts (Tovar-Restrepo, 2010).

ii. *Vulnerability:* Utilizing a livelihoods analysis approach (Davies, 2009) to potential impacts of climate change, the NAPA states that it is clear that the most vulnerable groups within each community are the poorest amongst them, and even within the poor groups, the most vulnerable are the women, children, elderly and the sick (MoEF, 2005). A livelihoods analysis approach groups individuals according to their access to assets and their capabilities to combine them to livelihood strategies for a means of living (FAO, 2010). The discussion of vulnerability in the NAPA goes on to say that it is likely that the adverse impacts from climate change will fall disproportionately on the most vulnerable groups within the country, and that any attempt to adapt or cope with the adverse impacts of climate change will need to have special emphasis on protecting and helping the most vulnerable groups. Additionally, groups in society will experience the impacts in varying degrees dependent upon their initial economic conditions (poor or non-poor), location

(coastal or non-coastal, rural or urban) and gender. Only 17 (35 percent) other countries' NAPAs state that women are particularly vulnerable to climate change, and Bangladesh's NAPA is the only one to discuss how impacts will affect groups in varying degrees dependent on the three categories listed above. Therefore, Bangladesh's NAPA is exceptional in its understanding of individuals' vulnerability to climate change and their ability to adapt.

iii. Gender Equality Programming: Bangladesh is one of the countries that has included women and gender in their project descriptions (Chapter Four). Although the women/gender inclusion in the project description focuses on women's vulnerability and their participation, inclusion of gender dimensions in the project summary highlights the country's relatively strong commitment to gender equity and that women were given consideration during project development. Bangladesh has three projects (out of 15) that specifically mention a gender dimension. These three projects and their gender dimensions are briefly described in the following paragraphs.

Project 1: Reduction of climate change hazards through coastal afforestation with community participation. This project recognizes that the involvement of local people, especially women, will enhance their adaptive capacities and livelihoods in general (MoEF, 2005).

Project 9: Development of eco-specific adaptive knowledge (including indigenous knowledge) on adaptation to climate variability to enhance adaptive capacity for future climate change. The rationale/justification section of this project states that in all of the ecological regions, the poor (including women, elderly and children) are the most

vulnerable and likely to also be most adversely impacted by climate change. Therefore, “eco-specific actions for helping vulnerable communities (with emphasis on women, children and the elderly) need to be developed and disseminated to the vulnerable communities to allow them to adapt to potential impacts of climate change” (MoEF, 2005, p. 34).

Project 14: Promoting adaption to coastal fisheries through culture of salt tolerant fish special in coastal areas of Bangladesh. The project includes women in regards to disbursement of its livelihood support fund, stating that funds will be disbursed to the most vulnerable sections of people, particularly vulnerable women for undertaking alternative income generating (AIG) activities.

B. Gender Inequalities

According to the International Labor Organization (2014), the status of women in Bangladesh is defined by an ongoing gender equality struggle, prevalent political tides that favor restrictive Islamic patriarchal models, and woman's rights activism. Bangladeshi women have made massive gains since the country gained its independence in 1971 (ILO, 2014). The past four decades have seen increased political empowerment for women, better job prospects, improved education and the adoption of new laws to protect their rights (Khan & Ara, 2006). As of 2013, the Prime Minister of Bangladesh, the Speaker of Parliament, the Leader of the Opposition and the Foreign Minister were women. In local government, approximately 25 percent of the elected members are women (MoEF, 2005).

Despite recent gains in the political arena for women, Bangladesh's socio-cultural environment contains pervasive gender discrimination, and women and girls face many obstacles to their development. Girls are often considered to be financial burdens on their family, and from the time of birth they receive less investment in their health care and education (UNICEF, 2007). In the home, women's mobility is greatly limited and their decision-making power is often restricted. For instance, approximately 48 percent of Bangladeshi women say that their husbands alone make decisions about their health, while 35 percent say that their husbands alone make decisions regarding visits to family and friends (UNICEF, 2007). Although Bangladesh has made considerable improvements in the status of women, gender inequalities still persist and will have impacts on vulnerability to climate change now and in the future. By addressing these inequalities in climate change adaptation strategies and policies, we can simultaneously seek to reduce inequalities while reducing vulnerability to climate change.

C. Discussion

From the previous chapter we learned that Bangladesh's NAPA does not describe the specific vulnerabilities that women face to climate change but does provide a thorough understanding that women are specifically vulnerable to climate change and that adaptation strategies need to protect and help those that are most vulnerable. The NAPA also states that there are varying social and cultural dimensions that shape individuals vulnerability and adaptive capacity. Bangladesh's NAPA does not have any specific projects that target women's vulnerability or adaptive capacity but the NAPA has three projects that mention gender, although none of them specifically address

vulnerabilities that women face in regards to climate change and none of them seek to reduce overall gender inequalities in the country during the implementation of the project. The NAPA does list that women's empowerment is selected as an activity selection criterion. In regards to participation, women as individuals participated in the NAPA process, but there were not any women's organizations or representatives of women included.

Bangladesh's NAPA has some improvements in their policy compared to Afghanistan's in terms of the importance of the vulnerabilities that women face to climate change and in terms of their ability to address these vulnerabilities. Bangladesh's overall gender inequality (GII) is decreasing, from 0.587 in 2005 to 0.529 in 2013, and there are increases in women in leading government positions and in percentage of women in government offices. This increases the likelihood of women's voices being heard in decision-making bodies and having gender equality initiatives within policies. Comparing the gender dimensions of Bangladesh's NAPA to Afghanistan's, we see that Bangladesh's NAPA is better equipped to reduce gender inequalities. In comparing the gender dimensions of the NAPA to other country data, such as HDI and GII, we can see that Afghanistan's NAPA reflects the country's low HDI and high GII, while Bangladesh's NAPA reflects their higher HDI and lower GII. We will continue to look at these patterns in the remaining two country profiles.

V. Maldives

The Maldives is an archipelago of twenty-five low-lying coral atolls located in the Indian Ocean, in Southern Asia. There are 1190 small tropical islands and 358 of the

islands are currently being utilized, mainly for human settlements, infrastructure, and economic activities. The 320,000 people of the Maldives currently inhabit approximately 192 islands (MoEEW, 2006). Although geographically the islands are widely dispersed, the country is strongly connected by bonds of language and religion. The Maldives society is unique as a nation as everyone speaks the same language and belongs to the same religion, as they are required by law to be Muslim (Fulu, 2007). Maldivians speak Dhivehi and the contemporary population is culturally homogeneous (MoEEW, 2006).

The small size, extremely low elevation and unconsolidated nature of the coral islands place the people and their livelihoods at very high risk from climate change, particularly sea level rise (MoEEW, 2006). Over 80 percent of the total land area of the Maldives is less than one meter above mean sea level (MSL). More than 97 percent of inhabited islands reported beach erosion in 2004, of which 64 percent reported severe beach erosion (MoEEW, 2006).

Groundwater is a scarce resource because of the hydrogeology of the country. The freshwater aquifer lying beneath the islands is shallow, 1 to 1.5 m below the surface, and no more than a few meters thick, and surface freshwater is lacking throughout the country. Ninety percent of the atoll households use rainwater as a principal source of drinking water; however, the predicted changes in precipitation have the potential to impact rainwater harvesting across all the atolls and particularly in the north. Seventy-five percent of the population has storage tanks to hold their freshwater supplies but these storage facilities are vulnerable to flooding and high wave occurrences (MoEEW, 2006).

Tourism is the main economic activity in Maldives and directly and indirectly helps produce 74 percent of GDP, with fishing contributing another 9.3 percent of GDP (World Bank et al., 2005). Agriculture accounts for around 3 percent of GDP, but on more than a fourth of the islands the cultivation of fruits and vegetables for home use and for sale is considered the most important or second-most important economic activity. This provides employment for approximately 5 percent of the total atoll population, and about 8 percent of women (MPND & UNDP, 2006). How women contribute and interact within the economy is described in the gender inequalities section of this country profile.

The NAPA describes the global and national predictions for climate hazards. The impacts of the vulnerable systems in the Maldives are described in detail in the NAPA, with 20 of the 95 pages dedicated to describing the vulnerabilities and impacts in the following identified high risk sectors: land, beach and human settlements; critical infrastructure; tourism; fisheries; human health; water resources; agriculture and food security; and coral reef biodiversity.

A. Overview of Gender in Maldives' NAPA

The Maldives selected four broad objectives as the basis for prioritization of adaptation activities, and criteria were developed to assess adaptation activities against each objective. These are:

- Objective 1: Reduce the degree of adverse effects of climate change.
- Objective 2: Reduce poverty and promote equality to enhance adaptive capacity.
- Objective 3: Achieve synergy with national development goals and Maldives Energy Authority (MEA).
- Objective 4: Cost-effectiveness.

The second objective is to reduce poverty and promote equality to enhance adaptive capacity. Of the three listed indicators for this objective, the degree to which empowerment of women is achieved is included (MoEF, 2005). Additionally, the NAPA states that synergy with national development goals is one of the objectives of NAPA. The Maldives Seventh National Development Plan (7NDP) and the Millennium Development Goals (MDGs) are the country's current development initiatives. One of the goals of the 7NDP is to promote gender equality, family values and youth development. One of the goals to be achieved by 2015 specific to the MDGs is to promote gender equality and empower women. As these two national development plans provide the guiding elements of the NAPA, and they both have gender issues and women's empowerment as an important goal, it should be obvious that the NAPA would reflect these issues. The inclusion of gender issues and women's empowerment in the guiding elements of the NAPA indicates that the country understands the gender dimensions of climate change and that if the policies fail to address these dimensions, then the policies will be less effective. As gender is included as a development goal of the Maldives, we can assume that these decision makers understand the NAPA's unique ability to promote gender equality through development. Although it is suggested that women's perspectives and gender mainstreaming has been applied to the NAPA process (especially by including it in the guiding elements of the NAPA), there is no evidence that women's perspectives or needs to adapt to climate change are addressed throughout the document.

i. Participation: There is no mention of women's participation in the NAPA.

ii. Vulnerability: There is no mention of gender-differentiated vulnerabilities in the NAPA.

iii. Gender Equality Programming: There is no mention of women within the project proposals. There is no mention of reducing gender inequalities through NAPA processes.

B. Gender Inequalities

Despite the fact that women's participation or gendered vulnerabilities are not discussed at all in the NAPA, there are gender inequalities in the Maldives. This is evidenced by women's economic contribution to tourism and fishing, women's roles in the home, and in labor force participation. According to a Republic of Maldives report (2005b), the tourism sector is the largest single contributor to economic development in the Maldives, but only 4 percent of its employees are women. Women make up a small percentage of the tourism employees because the work is often considered inappropriate and there are cultural and social restrictions on women traveling to other islands (Republic of Maldives, 2005b).

In the past men and women in the Maldives had relatively equitable roles in fishing, with men going fishing and women carrying out the processing and preparing of fish, primarily for subsistence (Fulu, 2007). Over the past few decades, this has changed, as the Maldivian economy shifts towards the service and tourism sector, and with the modernization of the fishing industry, the fish processing activities done by women in the islands have decreased significantly (Fulu, 2007).

Although the labor force participation rate for women has increased, there is still a considerable gender gap, with 72 percent of men in the workforce and 38 percent of

women active in the workforce (Republic of Maldives, 2005c). Women work mainly in education, health, and welfare sectors. Women's employment in the government has expanded but women held only six out of fifty seats in the national parliament in 2006 (Republic of Maldives, 2005a). Household management and taking care of children in Maldives are seen as the role of women, both in rural and urban areas. This is even true if the woman is employed outside of the home (Fulu, 2007). The man's role is primarily as the breadwinner of the family, even when women contribute considerably to household income (World Bank et al., 2005).

C. Discussion

The Maldives has a GII of 0.357 (UNPD, 2013). This is the lowest GII out of all 49 LDCs, which indicates that this country has the fewest gender inequalities. Despite this, there is very little evidence that the NAPA reflects the needs of women or is gender sensitive. While it could be assumed that since there are relatively few gender inequalities compared to other developing countries that the NAPA doesn't need to address gender, but this is not a strong argument. Although the Maldives GII is low compared to other LDCs, it is still ranked 64th for GII out of 161 countries, and the Netherlands, Sweden, and Denmark, for examples, are ranked 1, 2 and 3 for GII and have scores between 0.045 and 0.057 (UNDP, 2013). This illustrates that although the Maldives is ranked low for LDCs, they have greater gender inequalities than many developed countries. Not only do the GII rankings illustrate that there are gender inequalities in Maldives, evidence is given in the previous paragraphs concerning inequalities in household duties and in the labor force. Therefore, gender inequalities need to be addressed in the country's NAPA.

The only place in the NAPA that mentions women is in the discussion of implementation. Although women and/or gender are not addressed in the actual project proposals, reducing poverty and inequalities is an objective in prioritizing adaptation activities, which can be seen as an important component.

Despite the relatively few gender inequalities that are assumed due to the GII, there are considerable gender inequalities and a lack of legislation targeting the interests of women. For example, Maldives does not have a law against domestic violence, which is especially problematic as according to the Maldives Study on Women's Health and Life Expectancy 2007, 1 in 3 women in the country have experienced physical or sexual violence in their lifetime (UN Women in Maldives, n.d.). The lack of Maldives government to provide adequate legislation targeting the interest of women illustrates the discordance between perceived gender inequalities from the GII and actual gender inequalities within the country. This lack of attention to women's needs and the few women in government make it challenging for women to become involved in climate adaptation, and it seems that it is not encouraged by the government at this point to change this situation. Although women will feel the effects of climate change in different ways than men, and their vulnerabilities are severe, there is little commitment to gender equality in the NAPA, as well as other areas in the country. This poses barriers to addressing gender components. Therefore, Maldives is missing an opportunity with their NAPA to promote gender equality and they are depriving the society of women's talents, energy, and ingenuity.

In comparison to the two previous country profiles, the Maldives has the lowest GII score, indicating fewer gender inequalities, but also has the fewest mentions of women and gender in the NAPA. Although the Maldives GII is relatively low, there are still gender inequalities in vulnerabilities to climate change that need to be addressed in the NAPA, further illustrating a disparity between perceived inequalities by way of the GII and actual gender inequalities. Unlike the previous two country's NAPAs, the Maldives' NAPA is not reflective of their HDI or GII (in comparison to Afghanistan and Bangladesh).

VI. Niger

Niger is a Sahelian landlocked country that's nearest point to the sea is about 600 km away. This largely agrarian country is located in West Africa and has a population of 16 million, and 80 percent of the population is Muslim, with Christians and indigenous beliefs accounting for the other 20 percent. Three-fourths of the country's land area is occupied by desert (NECSD, 2006) and rainfall in Niger is characterized by severe variation in time and geography. Despite its dry weather, Niger has important ground and surface water resources, which represent the main water supply for the country. Deforestation, overgrazing, poaching, erosion, proliferation of plastic and domestic waste, soil pollution, pollution of surface and ground water, and bushfires are some of the major environmental issues in the country. These environmental stresses, combined with the current state of the economy, illustrate the extreme need for policies to aid adaptation to climate change.

Agriculture and cattle breeding are the country's strongest economic activities. Most of the population in Niger is rural (82 percent), and the populations draw the majority of their incomes from natural resource exploitation. According to the UN, with 3.32 percent growth rate, Niger has the 6th fastest growing population in the world. Population growth, combined with difficult climatic conditions, mainly droughts and inadequate and unreasonable use of natural resources, has led to economic imbalances expressed by the deterioration of livelihoods (NECSD, 2006). The NAPA attributes the fragile economy of the country to its external and internal isolation, the high population growth, an ecological environment that is difficult, and poverty. For these reasons, the people in Niger are extremely vulnerable to the effects of climate change.

The sectors most vulnerable to climate change are agriculture, cattle breeding, forestry, water resources, wildlife, health, and wetlands. The most extreme weather events occurring and projected in Niger are floods, droughts, sandstorms, extreme temperatures, and stormy winds (NECSD, 2006). The main adverse effects of these events on the national economy and on the most vulnerable sectors are decreases in crop production, deficiency in fodder for livestock, shortage of water ponds, water ponds silting up, reduction of forested areas, decrease in fishery production, decrease in biological diversity, increase in the rate of contracted diseases such as measles, meningitis, malaria, and respiratory diseases, and formation of sand dunes. These severe effects on vulnerable populations illustrate the need to address gender in NAPA's, as women are included in the most vulnerable populations identified in the NAPA (NECSD, 2006).

A. Overview of Gender in Niger's NAPA

The words women and/or gender were mentioned often in Niger's NAPA, mostly within the project proposals. Gender is first mentioned as a guiding principle of the NAPA. The NAPA team members agreed upon five criteria for priority activities selection, which are 1) the impact on groups and vulnerable resources; 2) impact on economic growth rate of the poor; 3) avoided losses for the poor; 4) synergy with the multilateral and environmental agreements, projects and national programs; and 5) cost (NECSD, 2006).

i. Participation: There is very little mention of women's participation in the NAPA process, with only one mention of their contribution. The NAPA states that the national consultation process was made up of three types of taskforces. One of the three taskforces consisted of a meeting that included women. This shows that women were included in the process, but no specific information is given about their level of participation or any mention of individuals or organizations that were able to speak on the behalf of women's needs. Despite this low input, or lack of description in the NAPA, we will see that women's needs are discussed in project proposals (NECSD, 2006).

ii. Vulnerability: Women, among others (cattle breeders, children, farmers, craftsmen, youth, elderly and traders) are identified as vulnerable communities. Other than in the project proposals, there is no mention of women's vulnerabilities in any other sections of the document. The bulk of the discussion about women occurs in the project proposals, which will be summarized in the following paragraphs.

iii. Gender Equality Programming: In five (out of 15) of Niger's project proposals, women are mentioned, either in regard to vulnerability, participation, or as stakeholders. Niger's NAPA has the greatest contributions to gender inequality programming out of all four countries analyzed in this chapter. The following descriptions include the project title and how women and/or gender are addressed.

Project 2: Promotion of food banks for livestock. Women are identified as one of the most vulnerable groups, along with children, when there is a livestock shortage increasing impoverishment and malnutrition.

Project 5: Promotion of peri-urban market gardening and cattle breeding. One of the activities listed for the project is to support income-making activities through livestock farming for women.

Project 6: Promotion of income-making activities and development of mutual benefit societies. The justification for the project states that following field visits, it was concluded that women and youth represent the groups most vulnerable to adverse effects of climate change. Multi-year droughts from climate change have caused the departure of able-bodied people towards urban areas, leaving only women and children who are formed into small trading activities. One of the objectives of the project is to reinforce economic activities for women and youth. One of the expected results is that the incomes of women and youth will increase. The activities of the project that pertain to women include counseling women on livestock farming and monitoring animal health, and also to promote the purchase, rent and use of land by women.

Project 9: Creating food banks. For decades, Niger has recorded multi-year crop deficits leading to food insecurity for rural populations who depend on agriculture for more than 80 percent of their food. This situation is mainly related to climate hazards and deterioration of natural resources under human and natural pressure. This insecurity concerns mainly the most vulnerable groups made up of women and children.

Project 12: Popularizing animal and crop species that are most adapted to climatic conditions. One of the expected results of this project is an increase in the incomes of women and youth.

B. Gender Inequalities

Despite Niger's constitutional provision for women's rights, deep-rooted traditional and religious beliefs result in discrimination against women in education, employment, and property rights (Rafferty, 2013). Women do not have equal legal status with men in customary courts and traditional mediation, and do not enjoy the same access to legal rights. Domestic violence and societal discrimination against women continue to be serious problems (US Dept. of State, 2010). Women traditionally have played a subordinate role in politics. The societal practice of husbands' voting their wives' proxy ballots effectively disenfranchised many women in the 1999 elections. Today, the law mandates that women fill 25 percent of senior government positions and 10 percent of elected seats (Kang, 2013). In 2009, women held at least 10 percent of the 3,724 local council positions. There were 11 women in the 113-member National Assembly and seven female ministers in the 32-member cabinet and five of the country's 20 ambassadors were women. The improvements in gender equality at the national level

illustrate that there is progress for women, but this may be slower in rural areas where discrimination is worse (US Dept. of State, 2010).

In rural areas women do most of the subsistence activities, such as farming, as well as childrearing, water and wood gathering, and other subsistence work (US Dept. of State, 2010). As water collectors for the family in Niger (GebreMichael et al., 2011), the drying up of water sources and the lowering of the water table has made it more difficult for women to fetch water. Women travel by donkey or on foot for several kilometers to fetch water for the household. Because of the work involved, young women have started to refuse to marry young men in villages that frequently experience water shortages. Older women in one such village started to buy donkeys for their daughters to facilitate the work of drawing water from the well and carrying the water to the family home. The donkeys are given to the young women to encourage them to marry pastoralists living in areas far from water points (GebreMichael et al., 2011). This is just one example of women's challenges faced from climate change, and an example of an adaptation strategy.

C. Discussion

Niger's GII is 0.707, which is very high and reflects a country that has very severe gender inequalities. This is the third worst GII rating out of 148 countries (UNDP, 2013). Although Niger's GII score is very high, their NAPA reflects one of the greatest contributions to gender inclusion out of all 49 analyzed NAPAs. Chapter Four of this dissertation discusses that gender vulnerabilities were identified in the NAPA and that details were given about women's particular vulnerabilities in multiple sectors. Niger's

NAPA identifies women's vulnerabilities in the health sector, the economic sector, and the livestock and agriculture sectors.

The NAPA has a detailed discussion of gender issues within the projects. Out of Niger's fifteen adaptation project proposals in the NAPA, five include women and three specifically address gendered vulnerabilities to climate change and seek to reduce gender inequalities while adapting. This is the highest number of projects that address/mention women and gender out of the four countries analyzed in this chapter. Lastly, there is a limited presence of women and/or gender expertise that participated in the NAPA.

Women as individuals participated in the NAPA process in terms of actors and stakeholders but there is no mention of contributions from women's organizations or representatives of women. For these reasons, Niger's NAPA is very gender sensitive in relation to other NAPAs analyzed in this chapter and compared to the other LDC's NAPAs analyzed in Chapter Four. The fact that Niger's NAPA is very gender sensitive, but Niger has a very high GII, further illustrates the point that GII is not a reliable indicator of gender sensitivity in the NAPA.

While I cannot be sure why Niger has discussed gender so much in the NAPA, I can speculate that because Niger has specific guidelines about women in politics that they also may have strict guidelines about addressing gender in legislation, although I couldn't find any reliable evidence of this. Additionally, Niger is the only country in this chapter from Africa and there could potentially be geographic reasons as to why gender is addressed in more detail in this NAPA than the other NAPAs discussed in this chapter. Although I, again, found no evidence of any scholarly work identifying this geographic

differentiation, it could be that government agencies or INGOs working in this area are specifically focused on gender and that NAPAs reflect this commitment. Further investigation, including interviews with NAPA developers and decision-makers in Niger, could shed some light upon the reasons why gender was included with such detail.

VII. Synthesis

Afghanistan, Bangladesh, Maldives, and Niger are already seeing the impacts of climate change and the impacts are projected to continue to worsen in the future (MoEEW, 2006; MoEF, 2005; NECSD, 2006; NEPA, 2009). By integrating a gender perspective into NAPAs, these countries can make their plans, policies, and projects more effective and may improve overall gender equality within their countries. This integration is imperative, as an “absence of a gender perspective at the planning level will lead to program[s] that are ineffective, inefficient, have wide gender gaps and lead to frustrations at the implementation levels” (Odigie-Emmanuel, 2010, p. 128).

Comparing the gender dimensions in these four NAPAs has shown that there are many differences in the ways that women’s needs to adapt to climate change are discussed and addressed. The Maldives NAPA provides an interesting example, as there is no mention of women’s participation in the NAPA process, and no mention of gender-differentiated vulnerabilities, even though they are considered a country with fewer gender inequalities by their low GII. The only mention of women in the Maldives NAPA is to state that the NAPA has synergy with national development goals, which includes to “promote gender equality, family values, and youth development” (MoEEW, 2006, p. 11). Despite this commitment in their guiding elements of the NAPA, they have failed to

integrate the needs of women within their NAPA document and process and are therefore missing an opportunity to reduce gender inequalities.

Afghanistan's NAPA also fails to mention women's specific vulnerabilities to climate change, but their NAPA states that vulnerabilities to climate change are differentiated by gender and that women face strong inequalities in Afghanistan. Afghanistan's GII rating is 0.712 in 2012, which is the second highest GII rating of all countries in the world (UNDP, 2013). Their NAPA discusses why there are challenges to including a gendered perspective in the processes, which isn't mentioned in any other NAPA. Although the NAPA does little to address the needs of women in regards to adapting to climate change, or in addressing gender inequalities, the recognition of this disparity is a productive step that could lead to further research and promotion of gender equality.

Bangladesh, with a GII rating of 0.518 (UNDP, 2013), which is relatively low compared to other LDC's, discusses women and gender the most out of the four countries compared in this analysis. The NAPA addresses women in four main areas: gender as a guiding principle, women's participation, vulnerabilities differentiated by gender, and gender in the project proposals (described in the country profile for this chapter), while most other NAPAs only mention women in a few of these categories. This NAPA also mentions a gender dimension in three project proposals, which is more than Afghanistan and Maldives (but less than Niger).

Niger, with a GII rating of 0.707 (UNDP, 2013), which is the third highest GII in the world and the second highest from the LDC's in this dissertation, discusses women

and gender extensively. The NAPA includes gender equality as one of the guiding principles of the NAPA (NECSD, 2006), addresses how women participated in the decision-making processes, and states that women make up one of the most vulnerable populations to climate change. Niger's NAPA mentions women in five (out of fifteen) of their project proposals, which is unique and exceptional. Despite the overall gender inequalities in the country evidenced by their high GII score, Niger's NAPA indicates that there is a strong commitment towards making their policy gender sensitive.

Throughout this chapter, GII has been discussed with the intention of drawing a connection between GII and the gender sensitivity and inclusion in each country's NAPA. Due to the nature of the GII as a generally accepted measure of gender inequality, I assumed that countries with lower GII's (fewer gender inequalities) would have a more sincere approach to reducing gender inequalities, which would spill over into policy-making and directly impact the gender sensitivity of the NAPA. These assumptions are proved false in this chapter and it does not seem that there is a positive connection between GII and gender sensitivity in NAPAs. Instead, it could be that developing a NAPA in conditions of high gender inequality highlights the gender dimensions compelling authors to address it (in a way that authors in low gender inequality countries are not compelled). It could also be that GII is not a good indicator to assess gender sensitivity in the NAPA and could demonstrate that GII may not include all relevant factors to assess the loss of achievement within a country due to gender inequality. It may also be that NAPAs may not reflect the commitment that a country has regarding gender

equality and that there are other intricate societal conditions that lead to a gender sensitive NAPA.

An additional factor that could contribute to the gender sensitivity of NAPAs is geography. Since this chapter only analyzed one country from each region, Africa, Asia, Island Nations, and the Middle East, it is impossible to pinpoint how geographic location could impact the gender sensitivity of a NAPA. Climate change will impact these regions differently, varying in severity and specific impacts. Areas with more severe impacts may focus more on gendered vulnerabilities, although I speculate that gender sensitivity in the NAPAs is more reliant upon the commitment and understanding of gender inequalities by decision-makers, policy-makers, and INGO contributors. Further studies could be beneficial if they looked at the gender sensitivity of NAPAs with regard to region, specifically focusing on gender sensitivity in African NAPAs compared to Asian and Island Nation NAPAs. Additionally, the contributions from INGOs working within particular regions could also influence how these countries address gender in NAPAs. For example, INGOs that work in Africa could be more gender sensitive and provide additional tools of country decision-makers in regards to gender than INGOs in Asia. Further studies that incorporate these ideas may provide some interesting analyses.

The next chapter will take a more specific approach to understanding how gender is incorporated into a country's NAPA, and provides some details as to how INGOs contribute to policy making in developing countries, specifically focusing on Nepal and its process towards developing its NAPA. While the information presented in this chapter is important in order to compare NAPAs between countries and regions, as well as to

discuss GII as a gender sensitive indicator, more detailed information is essential to further understand the interrelationship of societal conditions that lead to gender sensitivity in a NAPA.

Despite the increasing motivation of international organizations and current academic literature to integrate gender dimensions in climate adaptation strategies and policies, the findings of this study suggest that gender sensitivity remains limited. When a gender dimension is included, it is mostly in sections dealing with the identification of guiding principles or in gendered vulnerabilities, but fails to be translated into budgets, indicators, and targets. In Chapter Four, I identified 21 NAPAs that make general statements concerning women and adaptation, 23 NAPAs that describe gender-differentiated vulnerabilities, while only 5 NAPAs include projects that specifically target women's needs. A greater incorporation of a gender perspective would allow the NAPAs to become useful tools to aid the most vulnerable populations in each country and could assist in reducing overall gender inequalities.

Although there has been continued support of gender equality in UN organizations, there has been little improvement on gender equity in the NAPAs between when they were first developed in the early 2000s, and those that have been submitted more recently. By neglecting to address gender and gender inequality in a serious way, the UN is allowing gender to continually be dismissed, and is showing that a lack of commitment towards gender equality is accepted. Additionally, by countries failing to incorporate gender in regards to their climate adaptation strategies, they are showing that they have little commitment towards gender equality.

CHAPTER 6

GENDER AND CLIMATE CHANGE ADAPTATION: A CASE STUDY OF NEPAL'S NAPA

I. Introduction

In order to understand the complex political and social interactions that cause NAPAs to address marginalized communities, specifically women, this chapter takes a closer look at how the country of Nepal has identified gendered vulnerabilities to climate change and how adaptation strategies incorporate and seek to reduce gender-based vulnerabilities. Chapters Four and Five demonstrate that societal responses to impacts from climate change are varied and are contingent upon their ability to promote adaptive capacity. Through a critical analysis of Nepal's NAPA, as well as interviews with 18 participants and observations of a focus group discussion, this chapter shows the challenges that women face in adapting to climate change as well as highlights areas in the political process that hinder equality-driven adaption approaches.

Nepal faces many difficulties in building policy that is effective at addressing the gender components of adaption in the country (Mainlay & Tan, 2012) and two of them will be addressed in this chapter. The first is that while women play a key role in adapting to climate change, this has increased the burden on women rather than increased their importance in decision-making. The NAPA processes can provide an opportunity for women to gain importance in decision-making by including their needs as well as providing places for them to become involved in the local, regional, and national levels. By increasing their importance in decision-making, women can gain skills that benefit

their livelihoods and increase their overall status in the country, which would reduce their vulnerabilities. Although incorporating women can increase their overall status in the country, it can also increase their burden by taking women away from their livelihood activities and reducing their time spent with family. This chapter seeks to understand why women have not gained importance in decision-making for climate adaptation and how women's input could improve the NAPA and improve their overall status in the country. Secondly, despite incorporating supportive language in the NAPA concerning gender, it is much more difficult to incorporate dimensions that lead to action that reduces vulnerabilities through projects. This chapter will pinpoint some areas within the process where supportive language may be turned into action-oriented processes. These two challenges will be addressed throughout this chapter, leading to recommendations to reduce the burden on women and stimulate action from supportive dialogue in the NAPA.

Nepal is given special attention in this chapter as impacts of climate change are extremely pronounced in this landlocked country, which has exceptionally low adaptive capacity (Brooks et al., 2005). Situated in the central part of the Himalayas in South Asia, Nepal is bordered by China to the north and India to the south. The climate varies from cool summers and severe winters in the north to subtropical summers and mild winters in the south (MoE, 2010). There are three main terrain features: the Terai or flat river plain of the Ganges in the south, a central hilly region, and a rugged Himalayan region in the north (MoE, 2010; Manandhar et al., 2011). Each region is susceptible to climate change in different ways, and cultural distinctions within the regions require specialized consideration in developing and choosing adaptation strategies.

The population of Nepal was approximately 28 million as of the most recent census in Nepal in 2011 and is estimated to be approximately 30 million as of 2014 (CBS Nepal, 2014). Approximately 27 percent of the population lives in an urban setting and 73 percent live in rural settings (CBS Nepal, 2014). As much as 25 percent of the GDP is attributed to foreign aid. Agriculture is the mainstay of the economy, which provides a livelihood for more than 60 percent of the population and contributed approximately 34 percent to GDP in 2013 (Economic Survey, 2014). Small landholders and subsistence farmers dominate the agriculture sector, constituting 78 percent of all agricultural holdings (Jones & Boyd, 2011). Climate change poses considerable threats to the natural environment, which puts the large percentage of those dependent on agriculture-based livelihoods at risk.

Nepal is particularly vulnerable to climate change as the underdeveloped country relies heavily on natural resources for their economy and livelihoods. Poverty is widespread and the capacity of people to cope with climate change impacts is low (Shrestha & Aryal, 2010). Climate change is impacting Nepal in agriculture, water resources, energy, health, and biodiversity sectors. Temperatures are rising in Nepal at an annual rate of 0.04-0.06 degrees Celsius. This warming is not uniform across the country, with higher increases observed in high altitude regions (Acharya & Bhatta, 2013; Shrestha & Aryal, 2011). Annual precipitation data show a general decline in pre-monsoon precipitation in far- and mid-western Nepal, while there is a general trend of increasing pre-monsoon precipitation in the rest of the country (McDowell et al., 2013; Shrestha et al., 2000). This can have severe impacts on the agriculture system (Malla,

2009) and on those dependent upon it. Himalayan glacier melt and retreat have also been documented (Bolch et al., 2012; Scherler et al., 2011), with an increased risk in glacial lake outburst flooding (MoE, 2010; Shrestha et al., 2010). These impacts are expected to increase in the future but are hard to predict (MoE, 2010).

Nepal's low level of development and complex topography make it vulnerable to climate change (MoE, 2010). The socially and economically disadvantaged and the marginalized are disproportionately affected by the impacts of climate change (Kates, 2000; Adger et al., 2007). Vulnerability, or the propensity or predisposition to be adversely affected by climate risks and other stressors (Field et al., 2012), is socially differentiated (Sen, 1999). As previously stated, vulnerability is often high among indigenous people, women, children, the elderly, and disabled people who experience multiple deprivations that inhibit them from managing risks and shocks (Eriksen & O'Brien, 2007). When looking at vulnerability through a gendered perspective, it becomes apparent that women face multiple challenges that increase their vulnerability and reduce their ability to cope with and adapt to climate change (Lambrou and Piana, 2006; Mainlay & Tan, 2012). Additionally, women in Nepal are more vulnerable to the impacts of climate change than men, since women's adaptive capacity is determined by the availability and accessibility of natural resources, which are negatively affected by climate change (Mainlay & Tan, 2012). Women bear a double burden under climate change, as social and cultural discrimination against women exacerbates impacts from climate change (Mainlay & Tan, 2012). Through the process of mainstreaming gender into adaptation policy pathways (UN Gender Mainstreaming, 2002), Nepal has the ability

to develop and implement strategies that not only help men and women adapt to climate change, but also decrease gender-based inequalities (Enarson, 2000). By reducing gender-based inequalities, Nepal can ensure that the burden of climate change does not fall disproportionately on women, and that their vulnerabilities do not increase their burden, but instead increase their national importance in adapting to climate change.

This chapter provides a gendered analysis of Nepal's NAPA, contextualized within the country, and supported by in-depth interviews conducted with decision-makers for the policy document. Since women's vulnerabilities to climate change are socially, culturally, and economically constructed, it is important to understand these dynamics in order to contextualize the decision-making process of the NAPA. The in-depth interviews allow us to look at the processes behind the policy document, to assess how gender was addressed and understood. As stated in the previous two chapters that focused solely on written information, indicators can lead us to answers about gender equality in terms of the document and participation, but we cannot know how gender was included in the process without hearing from those who took part in the process. For example, in the country profile for Maldives in Chapter Five, I find that the country has fewer gender inequalities compared to other LDCs (based on GII), but their NAPA does not address gender inequalities in any depth. Therefore, without further investigation, it is unclear if gender was discussed during the process and if gender equality is an important underlying initiative. Interviews would help us to better understand these dimensions of the policy process.

Nepal provides a unique example in which to focus this study as the country is progressive in climate adaptation policies and their NAPA contains a unique approach to addressing women's vulnerabilities to climate change. Nepal's NAPA was submitted in November 2010, and was the 45th out of 49 NAPAs to be submitted to the UNFCCC, and is the synthesis of six thematic working groups (TWGs) and two cross cutting reports (MoE, 2010). The six TWGs include: a) water resources and energy, b) agriculture and food security, c) climate-induced disaster, d) public health, e) forests and biodiversity, and f) urban settlement and infrastructure. The two crosscutting themes are livelihoods and governance, and gender and social inclusion. The first activity of the TWGs, according to the NAPA, is a synthesis of key literature and policy documents relevant to climate vulnerability and adaptation under each theme (MoE, 2010). Additionally, two national and three regional workshops were held, along with consultations with civil society and private sector groups. Through vulnerability assessments and research by the TWGs, a detailed list of adaptation measures was created for each theme. The NAPA Project Team compiled the possible adaptation options and a combined set of criteria was developed by the TWGs. The TWGs then used the aggregated criteria to develop short lists of adaptation options that were of the highest priority. Nepal's NAPA includes a specific table describing the results of a gender sensitivity analysis of climate change impacts, and their national, regional, and community based adaptation plans (discussed later in this chapter).

II. Methods

This chapter utilizes policy analysis and interviews as methods in order to view Nepal's NAPA and NAPA processes through a gender lens. This chapter focuses solely on Nepal's NAPA and the processes that led to the development of the NAPA in the country. Through the previous two chapters, I have found that despite a stated commitment from the UN and NAPA guidelines that mandate a gender mainstreaming approach to NAPA development, the NAPAs vary in gender sensitivity and rarely provide sufficient information to address women's needs to adapt to climate change. This chapter seeks to analyze Nepal's NAPA first, and then to take a closer look at social, political, and cultural contexts, as well as NGO implemented projects, to see how gender is being addressed and to identify weaknesses in the NAPA development process in terms of gender incorporation.

I begin this chapter by discussing the differential vulnerabilities faced by women and men and Nepal, as described by the NAPA and through other published works. Nepal's NAPA was read thoroughly multiple times and data collected from the NAPA was organized in an Excel spreadsheet. The data collected and included in the spreadsheets consists of vulnerabilities faced in four sectors: water, agriculture, public health, and climate-induced disasters. Each of the four sectors includes information from the NAPA regarding the sector, information from other publications that reinforced the data found in the NAPA, relevant responses from the interviews conducted which either reinforced the data or provide additional information, and a discussion of the projects proposed in the NAPA that relate to each sector. In each of the four sections, two tables

are included. The first describes the vulnerabilities that women face in the sector, as described in the NAPA, and the second table includes the proposed projects from the NAPA. By organizing the data from the NAPAs into these two tables per sector, I am able to more clearly identify and discuss if the proposed projects will be able to address women's vulnerabilities.

Following the analysis of the four sectors and women's vulnerabilities, I discuss the political vulnerabilities that women face to climate change. The information from this section comes from the interviews that I conducted in Nepal, interlaced with theories about the political vulnerabilities that increase women's inequalities. I also identified four reasons why I believe that Nepal's NAPA has not been able to fully mainstream gender within the policy and policy processes. I identified these reasons after analyzing Nepal's NAPA and conducting interviews with policy-makers. The data from the NAPA and the interview responses were coded in order to find general themes that seem to explain areas within the decision-making process that led to hinder progress towards gender equality.

Following the discussion of the political vulnerabilities that women face to climate change, I conclude the chapter with recommendations for policy-makers and national governments to make NAPAs that reflect a greater commitment to reducing women's vulnerabilities and gender inequalities in the country. These recommendations are divided into two categories: technical and political. The recommendations stem from ideas presented by the interviewees and from political science and gender literatures.

From a broad perspective, this chapter addresses the disparity between the key role that women play in climate change adaptation and the neglect of gender in decision-

making processes, from the international level to the local level. Both the UN (UN Women, 2014) and the government of Nepal (MoE, 2010) have stated that gender mainstreaming will be applied during the NAPA processes, and this chapter seeks to understand the areas in the process where gender mainstreaming has been effective and areas where the use of this technique to address gender vulnerabilities and inequalities has not been applied.

III. Sector Specific Vulnerabilities to Climate Change

A. Water

Climate change will have major impacts in water resources in rural areas (Dasgupta et al., 2014). Impacts in water resources will include small, gradual changes (Eriksson, 2009), and increases in climate change-related hazards, such as glacial lake outbursts, landslides, debris flows, and floods, that will specifically impact the Nepali Himalayas (Nyaupane & Chhetri, 2009). The impacts of changes in water resource systems will be felt across many sectors of society, and will affect women's workload (Maharjan et al., 2012; MoE, 2010). This is especially true in Nepal, where women and girls typically collect the water for many household needs (Leduc, 2008). Given this, it is imperative to understand the different needs and priorities that women and men have in terms of water collection and use. Upadhyay (2005) reports that some women in rural villages spend between three and six hours a day collecting water, depending upon the season, and that water collection is almost always done by women (Upadhyay, 2005). Regmi and Fawcett (1999) also discuss women's role as water collectors and how drinking-water projects in Nepal need to integrate gender.

The accessibility of fresh water for many communities in Nepal is changing in response to natural hazards such as flooding and drought (Eriksson, 2009; Nyaupane & Chhetri, 2009; MoE, 2010). It is suggested that the “effects of climate change on water resources could yield manifold implications either due to too much and/or too little water” (MoE, 2010, p. 12). According to a study by Shrestha (2000) seasonal variation in annual precipitation shows a general decline in pre-monsoon precipitation in far-and-mid-western Nepal, with some areas of decreasing rainfall in western, central and eastern regions. Monsoon precipitation shows general decreasing trends in the mid-western and southern parts of western Nepal, while the rest of the country shows a generally increasing trend. Post-monsoon precipitation shows an increasing trend in most of the mid-western and southern parts of eastern and central/western Nepal, and a declining trend in the far-western and northern part of the western, central and eastern Nepal (Shrestha, 2000). The varied changes across regions illustrate the need for diverse adaptation strategies.

Not only are the trends in precipitation changing but there are also increased risks of flooding due to rapid glacial melt resulting in the discharge of huge volumes of water (MoE, 8). Flooding can result in increased health risks and contaminated water sources. This also directly impacts women more than men in their jobs as water collectors and managers. Additionally, droughts and floods can be particularly detrimental to women who keep livestock as a source of income and food security (Lambrou & Piana, 2005).

Although there is variable rainfall and increased risk of flooding, drought also has been documented. For example, drought was faced in Gargatti village from 2002-2006,

and there was rain at the time of rice transplanting in July, but not after (Manandhar, 2011). This is supported by another study in which farmers in the mid- and far-western hills and mountains experienced dry winters in the drought from 2002-2006. This affected their winter crops and their crops during the following year (ABPSD/MOAC, 2006). While the Gargatti village only has problems of drought, other areas faced floods and droughts due to low-lying areas with high water tables, such as the Bhagalpur village (Manandhar, 2011). The changes in climate and precipitation make water availability less reliable. This change in water availability is noted by one of the interviewees, who described the changes that many of the local people have noticed,

They describe[d to] me like a few years back, their water was not [what it was] compared to today. When there was more water, they only have to walk half [an] hour or one hour, but now most of the water sources are drying up so they have to walk long distances (L15).

Often documented in the gender and environment literature, women and girls generally assume primary responsibility for collecting water for drinking, cooking, washing, hygiene and raising small livestock, while men use water for irrigation or livestock farming and for industries (Fisher 2006; Khosla & Pearl 2003; Brody, 2008). This is true for women in Nepal, and is exacerbated due to out-migration of men in search of wage labor. When out-migration occurs, women assume responsibility for irrigation, livestock farming, and agriculture (Maharjan et al., 2012). The impact of changing water resources falling disproportionately on women was addressed in many of the interviews. One interviewee described in detail the challenges women face,

Women in Nepal are very much affected by water. Fetch the water, feed the sick kids, and you know... some areas have very bad water. Very, very bad water area. There is very little scope of work, rather than agriculture. They used to have to walk an hour to get water, and now they have to go two hours, two and a half hours to collect the water (L1).

As women are the primary collectors of water (Upadhyay, 2005), they are impacted more by the changing water conditions in the country. These changes make getting water more challenging and time-consuming (Dankelman, 2010b), posing risks to women's physical health, mental health, and reducing their time to partake in other vulnerability-reducing activities.

An interviewee further illustrates the direct impact on women from water shortages and increased time consumption,

Water shortage is the major problem [and] that is directly linked to women's work. If the sources of water are not there, then they need to walk farther and farther. They need to spend their time for collecting water, they need to travel [farther] (L12).

The time it takes to collect water has serious impacts on the women who have to collect it. The additional burden poses health and safety concerns. One interviewee describes how women find additional time for water collection by reducing their hours of sleep,

Carrying water from resources is the main job of the woman. They have water supply not in their house then they have to go maybe 1 hour, 2 hour to find other sources of water. So mostly carrying water from the source is the woman's job. Recently, I have been to another area in western Nepal where there is no water in that particular village. What they say is that the women get up at 12 o'clock in the night. I ask, 'When do they sleep then?' If they don't get up at [midnight] then they will not be able to manage water. They have to walk 1.5 hours to get there, and 2 hours to get back. Three to four hours they have to walk every day to get water (L8).

Lack of sleep can cause women to become tired and fatigued, which may make walking with heavy loads more dangerous. Additionally, dangers due to water collection become more severe in the hills and mountains of Nepal,

For most of the problems related to water resources, in most of the communities, the water resources are in the upstream sites. So they have to [come back down, which is dangerous], and they will have to climb like an hour or more upstream (L16).

The interviewee explained that the uphill climb can be dangerous, with steep drop offs, but the downhill walk with the heavy containers of water can be slick, and also hazardous. Therefore, women must use extra caution to protect themselves, utilizing both physical and mental energy.

Nepal's NAPA does address water impacts directly on women, but the vulnerabilities are included in a table in the annex of the document, instead of mainstreamed within the document (Appendix C of this dissertation).

Women's Vulnerabilities	
Water	Decreased women's access to water resources increases workload, impacting on reproductive health (e.g. prolapsed uterus) and personal hygiene. Climate induced resource conflicts increases social violence, anxiety, and depression in women.
	Women are often the household members who look after water, firewood, and energy management. Any risk involving them should be addressed in climate adaptation strategies.

Table 6-1: Women's water vulnerabilities

These are important points and follow the same concepts that were discussed in the interviews, but the proposed projects within the NAPA do not incorporate ways to reduce these vulnerabilities. Out of the nine project profiles in Nepal's NAPA, two of them specifically target water resources. Their names and descriptions are presented in Table 6-2.

Each project profile has a one to two page description of more details about the proposed project, including project rationale, description, goals, objectives, activities, short term outputs, potential long term outcomes, implementation, time frame, estimated total cost, risk and barriers, and monitoring and evaluation. Gender and/or women are not mentioned in any part of these two project proposals, even though there are obvious connections between the gender components in Table 6-1 and activity components listed in Table 6-2.

Project #	Project Title and Activity Components
Project 1	<p>Title: Promoting Community Based Adaptation through Integrated Management of Agriculture, Water, Forest, and Biodiversity Sector.</p> <p>Activity Components:</p> <ul style="list-style-type: none"> • Ensuring ecosystem and community adaptation to climate change through integrated watershed management in Churia. • Initiating on-farm soil and water conservation activities to support hill and mountain communities vulnerable to climate change. • Promoting water management in river basin areas at municipal level. • Reducing the vulnerability of communities and increasing their adaptive capacity through flood management. • Promoting and up scaling Multi Use System (MUS) for the benefit of poor and vulnerable communities in mid-hills and Churia range. • Scaling-up and implementing non-conventional irrigation systems in water stressed areas.
Project 8	<p>Title: Empowering Vulnerable Communities through Sustainable Management of Water Resource and Clean Energy Supply.</p> <p>Activity Components:</p> <ul style="list-style-type: none"> • Conserving lakes supplying water and ecological services to urban areas. • Promoting rainwater harvesting structures and technologies. • Conserving water supply source (quality as well as quantity) and strengthening programs of existing projects affected by source reduction. • Developing nationwide urban groundwater monitoring systems and enhancement of regulatory measures. • Establishing and improving micro-hydropower projects being affected by the acute water shortages. • Improving water mills for multi use.

Table 6-2: Water projects from Nepal's NAPA

Despite the lack of inclusion of the gendered dimensions of water in the NAPA, some of the organizations, including NGOs, which implement activities set out in the

NAPA, have strong gender components. For example, multi use systems (MUS) were outlined in the activity components of project 1 in Table 6-2 (MoE, 2010). This idea has been implemented in Nepal largely through the Smallholder Irrigation and Market Initiative (SIMI), which is a USAID-funded project being implemented by Winrock International and other local partners, including the Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED), Support Activities for the Rural Poor (SAPPROS) and the Agricultural Enterprise Center (AEC) (Mikhail & Yoder, 2008). An example of a project in Senapuk, Nepal describes the involvement of women in the planning and construction process for the MUS (Mikhail & Yoder, 2008). Firstly, three women out of seven total members were on the committee for the construction of the MUS. Mikhail and Yoder (2008), who published work on this project, state that women and men participated heavily in the project but that their roles were somewhat different. While women gave suggestions about the needs and problems of the scheme, they were not as actively involved in the planning and decision-making as the men. On the other hand, women provided the majority of the labor for construction (55 percent), possibly due to the large number of men working outside the village. The benefits to women from the MUS were also described in the project description. For example, girls that previously missed school in order to carry water are now fully able to attend school since they no longer require additional time for water collection. Additionally, the extra time women save on water collection is now being spent on vegetable cultivation, which changes the nature of the domestic workload and the nutrition available to children (Mikhail & Yoder, 2008).

Another NGO, iDE Nepal, also has initiatives to build and promote MUS. The two main systems that they have built tap spring sources and use gravity to pipe water to storage. One system uses a single tank to distribute water to hybrid taps where domestic water is gathered and a hose can be attached to fill up drip irrigation header tanks. iDE states that MUS installations reduce the labor required for water collection and improve sanitation and hygiene for participating households, and they also help women play a larger role in the household decision-making process because of their increased income. They also state that 76 percent of those impacted by MUS are able to send their girls to school after MUS installation (iDE Organization, 2014).

These two examples of gender inclusion and promotion of equality in MUS strategies illustrates that gender equality can be promoted in climate adaptations strategies at the local level. Despite the lack of inclusions of gender equality promotion in the NAPA, local level implementers can promote ideas set forth in the NAPA to be much more inclusion of women and to promote gender equality in the processes and implementation of the projects, but when not stated specifically in the NAPA, this depends on the gender awareness of local implementers. The proposed projects in the NAPA should explicitly discuss how projects could incorporate women and reduce their vulnerabilities so that all implemented projects will include gender dimensions, without leaving the responsibility solely to implementers. The following section will discuss how climate change will impact agriculture in Nepal and how the NAPA addresses gender-differentiated impacts in this sector.

B. Agriculture

Changing patterns of extreme events and/or effects of climate change on biophysical processes in agriculture will impact rural economies and livelihoods (Dasgupta et al., 2014). Some livelihoods are directly climate-sensitive, such as rain fed small landholder agriculture and seasonal employment in agriculture (Agrawal et al., 2014). Communities have identified changes in climate as being largely responsible for declining crop and livestock production (Eriksson et al., 2009; Malla, 2009). Rice yields are particularly sensitive to climatic conditions and these are expected to fall in the western region and areas where a larger population of the poor live (MoE, 2010). This is especially important in a country like Nepal, where two-thirds of the population has an agriculture-based livelihood (MoE, 2010) and their subsistence farming economy is facing increased risk from climate change (Eriksson et al., 2009; MoE, 2010).

In Nepal, a typical role of women is to care for livestock and agriculture (Leduc, 2008; Upadhyay, 2005). According to a study by Raut et al. (2013), both men and women actively participate in land preparation activities and women mainly perform the first step in preparation activities, by cutting and removing vegetation and incorporating crop residues. Men typically plow, while women break up the soil clods after plowing is done. Women also carry farm manure and spread it on the field. Men typically do most of the decision-making in regard to buying pesticide, and they also spray pesticide and irrigate (Raut et al., 2013). Therefore, when these systems are threatened, both men and women will be affected, but in different ways due to their different roles in agriculture. Women tend to play a greater role in natural resource management and ensuring nutrition, and

women often grow, process, manage and market food and other natural resources and manage vegetable gardens (FAO, 2003). Due to climate change, women may spend more time collecting plants and cultivating their crops for subsistence and local markets. As women are spending more time providing food for their families, they have limited time to participate in decision-making and income-generating activities (Maharjan, 2012). For these reasons, women are particularly vulnerable to climate when it changes agricultural patterns. Not only is this typical in Nepal, but in many other countries as well (Brody et al., 2008).

Some of the effects of climate change on agriculture are discussed in the interviews. A few interviewees mentioned how the changing environment is affecting the crops and the challenges that women face when tending to agriculture. This interviewee discusses the impacts of climate change,

Climate stress is now changing, and some years it rains heavily. This year has been very nice and they have started growing crops quickly in the season. In one year before, it was very dry so it was uncertain. And whenever there [are stresses] in the hillside, the landslide, the flash floods, the people have to adapt to the hazards and floods (L16).

Identifying strategies to adapt to climate change is very challenging as impacts are uncertain and variable. It is very challenging “for the farmers. Like the monsoons, the rains, sometimes [it doesn’t] rain. It is very difficult to predict [when] we have to plant” (L5). Climate change makes it difficult to plan for when they can expect food supplies. For example, an interviewee said that “one of the local farmers, she complain[ed] to me. Maize used to ripen around three and a half months, now it goes four months or more than that” (L1). While these changes may not be directly related to climate change, this

statement illustrates the challenges that communities in Nepal face, which will be exacerbated by climate change. Additionally, any changes and disruptions in agriculture put additional mental and physical stress on women. Women need additional safety nets to supply food for their family if their crops take longer to mature or if they must delay planting due to weather conditions. Unfortunately, women often do not have the ability or resources to create and maintain a safety net (Tovar-Restrepo, 2010).

When there are shortages of food, typically it is the women who suffer the most (Dankelman, 2010b). Two interviewees said that women will often eat less food when there are times of shortages, which could make the women sick or weak, and therefore, have less energy or motivation to continue to take care of their family. These struggles are illustrated in the following passages,

[When there is a shortage of water], crops are affected. And that will reduce the availability of food and because of the shortage of food, it is the women who eat less than their children and their elders. This impacts them in terms of access to factors like education, status, literacy; and that is because of the social/cultural barriers (L12).

In the village, in the remote area... [if there is less food, then it is women who will eat less]. So they work hard, they get less food, they have to do the household work, look after the children, all the guests, and the cleaning of the house (L8).

Through agriculture changes, we can see the different vulnerabilities women and men face to climate change. Nepal's NAPA includes the vulnerabilities that women face to the agriculture and food security sector and they are presented in Table 6-3.

Women's Vulnerabilities	
Agriculture	Male out-migration imposes additional workload on women.
	Women consume less food during shortages causing under-nourishment and weakness- especially during pregnancy and lactation.
	Women are custodians of local knowledge, agricultural skills and practices (e.g. seed preservation) and other livelihood related activities. Loss of these resources due to climate change would make women more vulnerable. Adaptation strategies need to improve women's access to these resources.
	Due to limited access to credit, market, land, and agricultural extension services, women are more vulnerable to adverse climate change impacts.

Table 6-3: Women's agriculture vulnerabilities

These four points are essential to understanding women's vulnerabilities in this sector and it is important that they are included in the NAPA. There is one project in Nepal's NAPA that addresses agriculture, but unfortunately, the above mentioned gendered vulnerabilities are not addressed in this proposed project.

Agriculture	Project Title and Activity Component
Project 2	<p>Title: Building and Enhancing Adaptive Capacity of Vulnerable Communities Through Improved System and Access to Service Related to Agricultural Development.</p> <p>Activity Components:</p> <ul style="list-style-type: none"> • Enabling climate vulnerable communities to sustain livelihoods by improving access to agricultural services. • Increasing community climate adaptive capacity through improved production and marketing systems. • Strengthening highland-lowland linkages to improve community access to goods and services. • Promoting sustainable underground water management for irrigation. • Promoting improved animal breeds adaptable to climate uncertainty.

Table 6-4: Agriculture project from Nepal's NAPA

The goal of this project is to “develop the climate change adaptation capacity of vulnerable farmer communities by developing climate resilient agricultural practices” (MoE, 2010, p. 35). As women make up a large percentage of agricultural workers in Nepal, particularly when men migrate out of the country for work, then these agricultural practices need to accommodate for gender differences, such as physical demands or culturally appropriate actions for women.

Drip irrigation in areas of Nepal is a technology that allows women to continue contributing 88 percent of the total labor use for vegetable production and can reduce irrigation time by 50 percent, from 1-2 hours of conventional irrigation methods (Upadhyay et al., 2005). In the drip system, users just have to fill a 50-litre drum and turn on its gate valve to open the passage of water through small pipes arranged in the field. Conventional irrigation requires irrigating manually by carrying water to the crops in the field. A qualitative study revealed that women utilized the saved time for purposes such as childcare, socializing, resting, and tending to livestock (Upadhyay et al., 2005). Although I could not find any resources linking NAPA related implemented projects with specific women's initiatives, the Upadhyay et al (2005) article illustrates that there can be a direct link between women's empowerment and climate adaptations strategies in regards to agriculture. Women can benefit mainly in terms of access to income from work, such as growing vegetables, rearing livestock, and contractual farming. This financial empowerment is crucial for women as they are household managers, food providers, and caretakers of their family (Upadhyay et al, 2005). Financial empowerment provides women a safety net when more traditional means to care for their families are disrupted due to climate change. NAPAs should provide specific context in order to build women's empowerment through agricultural based adaptation strategies.

Agriculture activities are part of a women's role, but become their sole responsibility when men migrate due to lack of income earning jobs around their homes (Jones & Boyd, 2011; Maharjan et al., 2012). This important dimension of gender relations in Nepal will be more thoroughly discussed in the following paragraphs.

i. Out-migration: When there is not work for men to make enough money to support their family, they must leave their homes in search of wage labor. Out-migration, as it is called, is having a big impact in Nepal and exacerbates the different ways that men and women are being affected by climate change (Gartaula et al., 2012; Maharjan et al., 2012; Massey et al., 2010). While women make up about half of the world's migration population (Ramirez et al., 2005), 90 percent of Nepalese migrants are men (CBS, 2004). Migration in Nepal, unlike many other Asian countries, is highly male-dominated, and it is estimated that about 15 percent of the total economically active male population (which is older than 15 years of age) in the country was involved in international migration in 2003-2004 (Maharjan et al., 2012). The figures for women are much lower, with just above 2 percent migrating (World Bank, 2006).

Often, due to lack of agricultural productivity (in some instances caused by climate change), men must look for other income opportunities to support household needs. This leaves women to do all household chores and duties by themselves. Jones and Boyd (2011) discuss that out-migration has been a long-term trend, occurring for the past 200 years (Adhikari, 2006; Jones & Boyd, 2011) but given persistent gradual changes in the local climate, men are migrating for longer periods (Jones & Boyd, 2011) and in unprecedented numbers (Thieme & Wyss, 2005). Upadhyay (2005) describes that under circumstances of monsoon failure, frequent droughts and floods, and food insecurity, rural men are forced to out-migrate to earn income to support their families and the feminization of agriculture and natural resource management is increasingly becoming a common phenomenon in South Asia. Almost all of the interviewees discussed out-

migration in some respect, highlighting its consequences on society. An interviewee articulates the dynamics of out-migration,

First, in our hill and mountain areas, out-migration of male members of households is a common thing. And sometimes they go to foreign countries, Arabian countries, and sometimes they go to India for seasonal labor. Because of this kind of migration, women are overloaded. They need to take care of the children, family members, the livestock. In this context, all the additional burden and problems created by climate change [fall on women]. Because there is no rain, production is affected. And then food security. Because the women [are] only there, she needs to manage the things, how to feed the children, how to feed the elders, and even to go to the water sources. It's a very dry area (L12).

One particular interviewee describes out-migration as a direct response to reduced agriculture output,

Once the livelihood is affected, usually men are the ones who will look at the outside opportunities, because the local land is not sufficient [to] sustain, so you have to look for something from outside. So that is [the] men that have to go out of the village, out of the house. And then once men go out of the house, or the village, [and they are gone for] some extended period of time, the whole village is [made up of] women and everything has to be done by women. Men's responsibilities have to be performed by the woman, [and they have a greater] burden (L2).

Out-migration affects both men and women. Although the men must leave, women are left with an increased burden, and additionally, no help in their agriculture activities.

Therefore, women's involvement in natural resource management is significant and increasing (Upadhyay, 2005). Some women have even given up agriculture due to their increased workload,

When I talk to these ladies [and ask] 'how you carry out these agriculture activities because climate change is affecting,' [they say] they have given up agriculture activities. Most of them don't practice. And if they do, it is very much less. [I ask] 'what have they been doing', [and they reply that] they are sitting idle, taking care of the children, and their husband or brother sends the money from outside and they simply buy [what they need] (L15).

Out-migration plays an important role in the vulnerability of women and men to climate change and illustrates the connectedness of the agriculture, labor, and gender dimensions of the system.

C. Disaster

Climate change studies suggest an increase in likelihood and intensity of climate-induced natural disasters (Field, 2012; Seneviratne et al., 2012). Nepal's NAPA states that trends in flooding are closely related to the effects of higher temperature on glaciers, and as a result of increased glacial melt, twenty glacial lakes are at risk of bursting, six of which have been identified as critical (MoE, 2010). The NAPA also states that more than 4,000 people in the past ten years (NAPA published in 2010) have died due to climate-induced disasters and every year more than one million people are susceptible to climate-induced disasters such as floods, landslides, and droughts.

Women and men have different vulnerabilities during and after disasters. According to an interview (L5), in some parts of Nepal, women are not able to leave the house without a male relative. If there is a flood and a male relative does not come to collect her, then she will have to stay behind. While this rarely occurs, it demonstrates the importance of local adaptation plans that reflect the cultural dimensions of particular areas. Women are also vulnerable during floods as “they are affected because they can’t swim” (L5). In actuality, it is not that women are not able to swim (Brody, 2009), but that local institutional restrictions in many South Asian nations prevent women from learning how to swim (Chowdhury et al., 1993). Another interviewee goes into more details about why women are vulnerable to floods,

Let's say a flood arise, female, they can't swim. They don't know how to swim. But male, they can run easily. For female, if we look at the dresses that Nepali women wear, due to the dress, they cannot run fast. And male will be running out, but female will first release their animal they have in the house. They take care of children, small children. They look for everything and if there is no one left in the house then they will think of themselves (L15).

This interviewee brings up another important point, in which women have responsibilities for the household and must attend to these duties even in times of emergencies.

There is also evidence that women and girls are more likely to be victims of domestic and sexual violence after a disaster. They are particularly vulnerable when families have been displaced and are living in overcrowded emergency or transitional housing, where there is a lack of privacy (Brody, 2009). This was addressed during one of the interviews and illustrates the applicability of this concept in Nepal. The interviewee said,

If there are some flood or something that took place, and all the people are displaced, security will be the problem for [the] female. For females, we should [have a separate facility for them after natural disaster] (L15).

Brody (2008) attributes the increase in violence to men's loss of control in the period following a disaster, compounded by longer-term unemployment and/or threatened livelihoods. These examples highlight some of the different vulnerabilities women and men face to climate-induced natural disasters and prove the necessity of having gender-sensitive adaptation plans and strategies.

Nepal's NAPA includes a section about climate induced disasters in their gender analysis table that addresses five dimensions of gendered vulnerabilities.

	Women's Vulnerabilities
Climate Induced Disasters	Women have less access to early warning and climate information and generally, lack the skills to survive extreme events.
	Women face the risk of increased sexual violence in temporary shelters.
	Cultural and social restrictions curtail mobility of women and their ability to avoid disasters.
	Women and marginalized people are poorly represented in formulating disaster related policies and programs.
	In case of food scarcity, women often eat less and also become less careful about their health, which also makes them become more prone to malnutrition and diseases.

Table 6-5: Women's climate induced disaster vulnerabilities

These dimensions result in similar findings to those from my interviews in Nepal. Unfortunately, they are not included in the project proposals. There are two (out of nine) projects that directly relate to climate-induced disasters, but neither of these projects specifically discusses gendered vulnerabilities. The two projects are:

Disaster	Project Title and Activity Component
Project 3	Title: Community-based Disaster Management for Facilitating Climate Adaptation. Activity Components: <ul style="list-style-type: none"> • Building capacity to enhance community adaptation to climatic hazards. • Developing water-retaining structures as sustainable adaptation measures to address the effects of climate change. • Establishing, rehabilitating, and conserving small-scale drinking water supply schemes and traditional water sources. • Reducing the disaster risks at community-level with climate change dimensions.
Project 4	Title: GLOF Monitoring and Disaster Risk Reduction Activity Components: <ul style="list-style-type: none"> • Monitoring of GLOF and reducing climate-related disaster risks. • Developing early warning systems in disaster prone areas. • Linking climate change with disaster risk reduction and enhancing institutional capacity at different levels. • Mapping of hazards, assessing disaster impacts, and developing contingency plans. • Managing existing hydrological and meteorological network at the Department of Hydrology and Meteorology (DHM) and scaling-up its services. • Initiating GLOF and disaster-related research and development activities.

Table 6-6: Climate induced disaster projects from Nepal's NAPA

Although the NAPA does not specifically seek to promote women's involvement in disaster risk reduction, an NGO, ActionAid, promotes women's participation and

leadership in disaster risk reduction and climate change adaptation. ActionAid's experience demonstrates that facilitating women's leadership in disaster risk reduction initiatives builds a sense of self-confidence and empowerment which can help transform power relations in societies where women have traditionally been excluded from decision-making processes, but this requires a multi-layered approach (ActionAid, 2014).

A research project undertaken by ActionAid trained three local partner organizations and disaster management committee members in three districts of Nepal to use video technology to communicate their concerns about climate change and their experience adapting to its impacts. The results were that the process of participating in the action research helped the women to take a leading role in identifying risks and documenting climate impacts. In addition, it facilitated discussion and critical analysis among the women on the success of different adaptation strategies, which then enabled them to make informed choices on the best way to increase their resilience to disasters. The project was also successful in empowering women to share their experience in local discussions where their voices had previously been unheard and in the process starting to transform gender relations in their communities (ActionAid, 2014).

This project was also successful in bringing the voices of the women to the attention of national and international stakeholders. The women shared their films with the Nepal Ministry of Environment, Science, and Technology to advocate for the inclusion of women's concerns in adaptation funding plans for the NAPAs (ActionAid, 2014). Although Nepal's NAPA is not specific when it comes to addressing women's concerns within their priority projects, NGOs working in disaster mitigation are

implementing projects to promote gender equality and women's empowerment, and to support women's needs in disaster risk reduction.

D. Health

It is projected that climate change will inevitably affect the basic requirements of human health, including clean air, water, food, and shelter for all populations (Preet et al., 2010). The impacts will most likely have a greater consequence on marginalized groups. Nepal's current lack of primary healthcare for a majority of its population adds to their vulnerability. There is evidence that climate change can contribute to the spread of infectious disease (Altizer et al., 2013; Lindgren et al., 2012). Many vector-borne and water-borne diseases are known to be sensitive to changes in climatic conditions, and changes in the water system and temperature could aid in the spread of malaria, kala-azar, and Japanese encephalitis, usually spread by mosquitos (MoE, 2010). Not only are there changes to diseases, but women run the risk of becoming injured during water collection and women, men and children face mental illness due to stress and increased workloads (Lu et al., 2012).

One interviewee in the public health sector describes how the lack of primary health care affects those already marginalized, stating that

[The people] said that there are no health resources, and there is no mechanism for disaster preparation. They also say there is lack of primary preventive health services. Health services are run by untrained [persons]. They say there is nothing mentioned about health issues in climate change policy. There is no policy developed from the government level (L10).

Due to the lack of health care and other resources, there are many diseases and deaths related to climate change,

Because after the disaster, a lot of problems. Lots of disease, no hygiene, no toilet, no safe drinking water, no food. Nothing is safe there. So a lot of people die after a disaster because of epidemic. Diarrhea, malaria, etc. Mostly diarrhea. Mostly children under five (L10).

In regards to injuries, a significant number of miscarriages have been related to women and water collection,

The water resources have collapsed, the spring is closed, so they are supposed to go for three, four, five hours to collect water. To the river or the nearby stream, and even during the pregnancy. They carry too [much] water for them. When the water is not available near the residence, they are supposed to go far away and carry a big load with them, and they are already carrying a [baby]. Due to that, there were many miscarriages reported (L3).

Additionally, emotional and mental stress from climate change is affecting women, men, and children. Women worry about how to feed their families,

When there is no production, men won't worry that much. But female in the family will be much more affected; [wondering] "how will I feed my children, how will I take care of my family?" More mentally affected (L15).

Another interviewee describes the stress on women, "Their problem is to feed their kids, to secure the food for this evening. Even they cannot sleep well in the night because they are worried for tomorrow morning. That's the situation" (L3). While these comments relate to securing food, the stress affects women's mental health, which should not be overlooked.

Children are burdened with increased work in addition to their other daily activities, "Children are stressed because they have to carry water, as well as they have to go to school. School is also not very near. They have to walk maybe one and a half, two hours from their home. It has a big impact" (L8). Men are affected emotionally in their roles, especially during out-migration,

[When there is a natural disaster] they will feel sad, depress[ed]. When there is landslide, they have to be migrant. Usually, when they go they have to go to India. Depression [is] common [as well as] sexual transmitted disease (L18).

These physical and emotional health issues fall disproportionately on already marginalized people, as they have little access to resources to help them cope.

Public health is included as a sector of the gender sensitivity analysis located in Nepal's NAPA. The four factors listed are found in Table 6-7.

Women's Vulnerabilities	
Public Health	Due to socially constructed multiple roles, more women than men die or get injured from climate change related health hazards.
	Climate change exacerbates gender differentiation and poor health of women.
	Women bear the brunt of providing increased care of vulnerable children, disabled, and old age people.
	Climate change induced diseases, such as respiratory disorders, allergy, asthma and other respiratory diseases appear more among women, marginal people including children. This leads to women's illness, physical and mental stress.

Table 6-7: Women's public health vulnerabilities

These areas are similar to the findings from the interviews conducted for this chapter. Again, these are not found throughout the NAPA and are not included in the priority projects. There is one project proposed in the NAPA that directly relates to public health (Table 6-8).

Health	Project Title and Activity Component
Project 6	Title: Adapting to Climate Challenge in Public Health Activity Components: <ul style="list-style-type: none"> • Reducing public health impacts of climate change through evidence-based research and piloting. • Empowering communities through public education for responding adverse effects of climate change in public health. • Investigating disease outbreak and emergency response. • Scaling up programs on vector borne, water and food borne diseases and disasters. • Strengthening forecasting/early warning and surveillance systems on climate change and health.

Table 6-8: Public health projects from Nepal's NAPA

I was unable to find any implemented projects or project proposals that link women, climate change adaptation strategies, and public health, so it is unclear if the implementation of this proposed project would address gender inequalities.

While there is supportive language about women in the corresponding sections of the NAPA, there is not substantive evidence to suggest that women's vulnerabilities are addressed in any specific ways. This is further exacerbated by gender inequalities in the policy-making processes (Denton, 2002). These inequalities will be discussed in the following section.

IV. Political Vulnerabilities to Climate Change

Not only are women vulnerable to the physical realities of climate change, their vulnerabilities are exacerbated by male-biased decision-making processes. Traditionally, government processes in Nepal have been male dominated (Mainlay & Tan, 2012; Regmi & Fawcett, 1999). Men have made up the majority of the government and have failed to look at policies and strategies through a gender lens. Gender mainstreaming would an effective tool to promote gender equity and equality in the policy-making process if adequately applied (UN Women; Walby, 2005).

More women than ever are part of their government, and many government agencies and NGOs are focused on incorporating women and learning from their perspective. Additionally, the Ministry of Women, Children, and Social Welfare and the Department of Women and Children have included in their mandates to “empower women, especially those who are economically poor, socially deprived, or otherwise put at a disadvantage” (DWD Mandate). Nepal has also adopted the provisions of the

Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1991. Within this document, it states that “women’s representation in political and administrative offices is very poor” and “there is a strong tendency among political parties to confine themselves to the constitutional minimum (5 percent) when it comes to fielding candidates in elections” (CEDAW Report, 2002, p. 5). The report goes on to say that the Local Self-Governance Act of 1999 is a major step toward creating opportunities for political participation of women and foresees at least 20 percent representation of women in local institutions. Within the interviews conducted for this research, many interviewees spoke about the newly updated goal of 30 percent participation by women in governing bodies and noted that there are more women than ever in the government.

Despite the increase of women in government, the NAPA fails to fully incorporate gender into the NAPA process and the policy document. Many articles discuss the importance of mainstreaming, what it can achieve and how it is currently the best strategy to promote gender equality (Mainlay & Tan, 2012; Raczek, et al., 2010), and these are discussed further in Chapter Two of this dissertation. Although there are training manuals, conferences, and a growing literature on how to mainstream (Aguilar, 2009; Daly, 2005; Mainlay et al., 2012; Walby, 2005), there is very little research on why gender has not been mainstreamed into climate change policies and even fewer resources on why, if mainstreaming has been applied, it has not been very effective. Through the interviews conducted for this research, four reasons have been identified for why Nepal has not been fully successful with mainstreaming gender into their climate change

adaptation policy, NAPA. These reasons are areas within the policy process that I identified which hinder the ability to adequately address gender issues and decrease the ability of NAPAs to reduce women's vulnerabilities. Firstly, sectoral interests guide the process, and gender is given its own sector. Second, gender was incorporated as an end component. Third, there is a lack of communication between the levels of government and decision-making that has prohibited the flow of information about gender concerns. Lastly, women and advocates of gendered policies and needs have not participated enough to incorporate essential components throughout the process and document. These four reasons also explain why Nepal's supportive language on gender vulnerabilities leads to little action, and why women, even though they play a key role in adapting to climate change, have been given few roles in decision-making processes and developing adaptation strategies.

A. Sectoral Interests

As stated previously, Nepal's NAPA is made up of six thematic areas and two crosscutting themes. As the NAPA was being developed in Nepal, each of the six thematic working groups was administered to different ministries and departments of government. The working groups were then able to do their own research and write up the section in question. Gender and social inclusion are identified as crosscutting themes and therefore were not the sole responsibility of any ministry or department and also did not have a thematic working group assigned to them. Due to this structure, sectoral interests guided the policy and crosscutting themes were neglected.

With each section being assigned to different organizations, it encouraged the document to be created with sectoral interests from the start of the process. Many of the interviewees described how sectoral interests shape the policy process, which therefore shapes the policy to be non-inclusive. It was explained this way,

Actually, policy formulation is taken from sectoral efforts. If it is concerned with agriculture, then agriculture exercise on it and they create some policy document. Likewise, the climate change policy was formed in the same manner (L6).

Another interviewee described that decision-makers have their own interests, especially pertaining to their own field of study,

Sometimes [the development of the policy] is guided by the interest of the people in decision-making. For example, the people in the Ministry of Environment [are focused] on forestry. Sentence by sentence, I see the examples that the NAPA was driven by sectoral interest or personal interest (L6).

These statements show that even the decision-makers understand that they have sectoral biases, and that these keep them from understanding the complex nature of gender and social inclusion. Not only are these policies shaped by sectoral biases, they are also shaped by who gives the money to carry out these projects,

The second thing is that whether the activities or actions in the field will be driven by the community need or the interest of who gives the money, the government. In many cases, the money is spent at the interest of the staff members at the district level because they have some interest in what they spend the money on. They will share their programs and their views, concerns, but they have been modified by the interest of the staff members who will manage the money (L2).

Often times, those that give the money have clear directives that they need accomplished. Since gender and social inclusion are hard to monitor and monetize, they are often given minimal concern compared to strategies and technologies that have results that can easily be classified and monetized.

Another factor that undermines the incorporation of women's needs is that each sector has its own approach to gender and social inclusion. Therefore, it becomes challenging to decipher how each sector understands vulnerabilities differentiated by gender and to what extent women participated and were consulted. Additionally, due to the lack of standardized gender mainstreaming techniques, it is unlikely that each TWG was able to identify and promote gender equality in a substantial way. One interviewee describes the differences in gender approaches by ministries,

It is difficult in the policy process for each ministry [to] have their own policies. For example, the Ministry of Forest and Conservation, they have a separate gender strategy, gender monitoring system, and budgeting system, which are rarely translated in the lower level mechanism. For example, some of the local level staff don't know much more about the policies, but I'm thinking the policies should be placed in some central level (L17).

Since each ministry/sector is able to address gender in its own way, there are not any guidelines to instruct on how to include gender or by how much, so each has to make their own priorities. This can become a problem if there is no one in the ministry to encourage a gender approach, or who is assigned to learn about and address new and improving ways to address gender and social inclusion.

One of the interviewees described the importance of having someone to encourage these issues,

But in the case [of the administration team], I feel there should be women who strongly negotiate for the gender and woman issues, so that it comes in the platform. But whenever there is no one to talk about gender mainstreaming and women's issues, then the issues live in the saddle (L16).

Lastly, in some ministries there is confusion about the importance and necessity of incorporating gender in their sectors. One interviewee told me that there was a separate

ministry of women (he wasn't quite sure about the name of it) and thought that they were in charge of the gender dimensions for the NAPA, "There is a ministry for woman, child, and population, something. Women development commission. There is one commission for woman development, a ministry for woman, I [don't] have much detail" (L6). He was the only interviewee to discuss this ministry. He was correct in knowing that there is a ministry for women, which is the Ministry of Women, Children, and Social Welfare, but was incorrect in assuming that they were involved in the NAPA process. Upon inspection of the ministry's website and a thorough analysis of the NAPA document, there is no evidence that this ministry was involved in the process at all. This could illustrate that individuals involved in the NAPA process believed that this ministry would address gender and social inclusion and that they did not need to address it in their own sectoral analysis.

By Nepal organizing their NAPA process into six TWGs and separating gender and social inclusion into a crosscutting theme without an associated working group, the process has exacerbated the vulnerabilities that women face from climate change by not fully incorporating their needs. Additionally, by not having clear descriptions of each TWG's role in relation to gender and social inclusion, there is confusion within the TWGs and ministries about their responsibility to addressing these crosscutting issues. Due to the confusion, there is little, if any, discussion of the differentiated needs and vulnerabilities of women and men within many of the thematic working areas of the document.

B. End Component

Gender mainstreaming promotes the idea that gender should be addressed in all aspects of policy-making and imbedded into the process (Walby, 2005). It is evident in the policy document that gender and social inclusion were not mainstreamed through the process, but were created as an end component. During the development process of the NAPA, gender was addressed towards the end of the policy making process, after each TWG had written their section and the entire document was drafted. One interviewee addressed the lack of mainstreaming and also illustrated the confusion around who was to address gender,

This gender and social class inclusion part was added at the end of the process. And I think it is only for the documentation. Actually, we didn't see anyone. There was some consultant from the gender field. I could see a few of the experts from the gender side. She was there but I didn't see those people in the meetings. We didn't speak with them very much because we are from the agriculture section (L6).

While the speaker was not very clear, it is obvious that the interviewee is referring to a person involved in the NAPA process that he believed was working on gender issues. The individual to which the interviewee was referring to was identified and interviewed, and in actuality was involved in NAPA, but was not involved in any gender components of the document at all. This statement shows that there is significant confusion about gender and who was to address it during the NAPA process. Additionally, the interviewee assumed that a lady who has worked on gender in previous projects would cover the gender components, and therefore assumed that his sector didn't need to address it. This assumption could be an indicator of more widespread confusion about the responsibility of addressing crosscutting themes in the TWGs.

Despite the confusion, a consultant was hired to address gender and social inclusion for Nepal's NAPA. Although she had no previous experience with climate change or environmental issues, she is a trained gender specialist. She states, "I have very little knowledge about climate change. I was appointed for gender perspective and I was only [contracted] for two months" (L9). She was hired at the end of the process, after the document had already been drafted. She was instructed to create a report for all six TWGs about women's vulnerability. She sent the documents to each of the thematic coordinators. A few of the coordinators understood the comments and incorporated them into their sections while a few did not seem to understand whose task it was to address gender. She stated, "one or two [replied to] me and [told] me that it is your business, that you do it yourself, you do whatever you like. But I can't do anything in my report" (L9). Perhaps some of the thematic coordinators believed that there would be a section given to gender and social inclusion in the NAPA. This could be due to lack of understanding and instruction on what a "cross-cutting thematic issue" is and how each thematic group in the NAPA process should address it. The lack of attention given to the gender consultant hired illustrates the lack of commitment towards gender and social inclusion in the prioritization of the NAPA process. Additionally, the gender consultant described how she believed that she should be able to go into the field to learn some of the gender dimensions of climate adaptation, although she was not granted this due to budget constraints. Had mainstreaming guidelines been followed in the NAPA process, she would have been a consultant throughout the whole process and would have most likely been allowed to follow the other thematic groups during their fieldwork.

Not only was the task of gender and social inclusion delegated and not understood by all, gender was addressed after the document had been created, which does not follow mainstreaming guidelines. Another interviewee described how gender was treated as an after-thought in the NAPA process. He said

In fact, [the NAPA is] not that gender sensitive... Later, they called for one consultation and that table chart was added. At least there has been given some insight into that (L17).

The chart addressed in this quote is actually Annex 5 of Nepal's NAPA, which describes the gender sensitivity analysis of climate change impacts. It is one of the only mentions of gender in Nepal's NAPA and while it describes the vulnerabilities that women and men face in each thematic group to climate change, it clearly illustrates that gender has not been mainstreamed into the policy document. Furthermore, by addressing women's vulnerabilities as an end-component, there is little reinforcement about the commitment to gender equality throughout the text and has led to little follow-through action during implementation phases.

C. Lack of Communication

The lack of communication between levels of adaptation planning has also contributed to the exclusion of gender and the hindrance of adopting mainstreaming practices. In order to understand this in terms of NAPA, it is important to know more about the policy and the proposed implementation efforts. The NAPA is developed at the national level, using secondary sources and approved information from INGOs and the national government. The TWGs, organized at the national level, will sometimes seek assistance from regional, local, and community government officials and NGOs.

In terms of implementation of projects, Nepal has proposed the idea of LAPA and CAPA. LAPAs and CAPAs are designed to organize the priorities set forth by the national policy to evaluate and implement the projects in the best way possible for local community adaptation. As certain areas, communities, and villages in Nepal are diverse, it is imperative that national planning is broad, and local planning can therefore be more place specific. Additionally, a lot of the research needed to understand climate vulnerabilities and adaptation needs will be learned at local and community levels, instead of at the national level (Watts, 2009).

Although Nepal is the first to implement the LAPA and CAPA in order to address the lack of specificity in the NAPA, it is imperative that communication channels be organized so that knowledge flows freely among NAPAs, LAPAs and CAPAs. From the documents I received from decision-makers in Nepal regarding LAPA and CAPA development, there was no mention of gender concerns or plans on how to address gendered concerns within them. As many national policy makers believed that gender issues would be addressed at the local levels, it would be beneficial if the LAPA and CAPA guidelines discussed how they plan to incorporate gendered needs within these more place specific plans. Some of the information that needs to be disseminated from the national level to the local level includes goals of national planning, lessons from the international community, theoretical development strategies, and new techniques developed outside of the country. Additionally, there are ideas that need to flow from the local level to the national government, including vulnerabilities and adaptation strategies, so that policies can be more reflective of individual and community needs. National

planners need to have a direct channel to communicate with implementers so that project proposals can be explained and guidance given from a broader context. The importance of better communication among national and local actors was discussed in a few of the interviews.

One interviewee spoke about the challenges to strategies that are developed at the national level but need to be implemented at the local level,

[At the national level] we develop projects, we prioritize the projects. Then LAPA comes and we thought it would be implemented, because implementation will start at the local level, the district level, but I don't think that it [has] started (L4).

The lack of communication about implementation is damaging to both the national policy-makers and the local implementers. Once the national level policy and strategies are created and the document is submitted and finished, there is little communication between the creators and those expected to implement. There are few, if any, channels of communication between the two, and sometimes it is even hard to find out who created certain aspects of the strategies and what tools they envisioned would be helpful. Additionally, the interviewee also discussed how the policy creators have a theoretical understanding of how the implementation should go, but often do not have a thorough understanding of how the programs will be administered.

Another challenge is that often times the goals and responsibilities of an agency or ministry are very defined at the national level, but this does not translate to the regional, local, or community levels goals and responsibilities.

So far, the goals and the responsibilities are here at the national level. What Ministry of the Science, Technology and Environment need to do, what other agencies need to do, [are] very defined at the national level. Coming to district level, they are still unclear. That kind of coordination mechanism has yet to be piloted (L12).

The lack of transferable goals, coupled with the lack of communication among national, regional, and local levels of the adaptation process illustrate the real challenges to developing and implementing strategies set forth by the NAPA.

The lack of communication among levels has a negative effect on the ability to mainstream gender and social inclusion into the process. As previously discussed, there is a lack of commitment towards gender and social inclusion, and it is not evident whose responsibility it is to promote gender equality. Given that, coupled with few communication channels, it would be almost impossible to flow information in any direction related to gender equality in order to gain widespread support. Without widespread support from national and local organizers, as well as support from the different thematic sectors, it is nearly impossible to incorporate gender and social inclusion throughout the whole process. In order to promote gender and social inclusion within the NAPA, LAPA and CAPA, it is essential that communication between actors be improved.

D. Participation

Participation by women and by those who represent women is a main way to promote gender equality in the policy process. Agarwal (2001) suggests that “effective participation is seen as important both in itself, as a measure of citizenship and a means of empowerment, and for its potential effects on equity, efficiency and sustainability” (p.

1624). Additionally, women's caring abilities, widespread knowledge of their communities, experience with natural resources, and risk awareness are essential to effective disaster risk reduction and other adaptation related efforts (Aguilar et al., 2009). Many of the interviewees had a lot to say about participation and women. Many spoke about challenges to getting women to speak, while others discussed what we could learn when they do have the ability to discuss openly.

There are different techniques applied to overcome some of the challenges that women face with regard to participation in focus group meetings and discussions with local government officials and NGOs. Oftentimes, due to social constraints, women are not able to speak freely or they are envisioned as not holding valuable information. One interviewee described this by saying that, "If you ask a question of the woman, the male sitting beside her will answer" (L8). Another interviewee described a scenario when she was conducting focus groups for another project. She had challenges with including women in the meetings because the researchers had not understood the cultural interactions between women and men in the community and had not prepared a meeting place adequate to make the women feel comfortable,

At that time when I attended one meeting, there was a temporary shelter. There are many members and all the women's are outside of the center. And all the males are sitting there. And my friend and me were sitting there, and I asked the women to please have a seat and they were reluctant to sit. They said they were listening and they were fine. Then one of the women came and asked me 'sister, you come here, outside the center' and I went there. 'What happened,' I asked. She told me that when evening our children come to us and say, 'I am hungry, I need clothes, I feel cold.' They need their mothers. As a mother we have to take care of them, give food, manage household chores, and you are sitting with male member and meeting with males. I answered her and ask other ladies to sit there. 'Why they not sit there?' She answered me, 'how can we sit there, they are our brother-in-law, and how can we sit on one mattress.' And I had no answer. It's a cultural thing (L9).

These sorts of challenges make setting up focus groups even more challenging. Some of the tools to overcome these challenges were discussed during the interviews. Sometimes they hold separate meetings to try to understand the differences women and men have,

When the field visits were organized, I think it was separate meetings for women, separate meeting with male or female, or different social groups. But there were both meetings with men and women, and different communities can participate. That was the process. And during the discussions, they could share and reflect (L2).

This was discussed in another interview as well,

In some communities, if there are women and men together in focus groups, in some instances, women sit back and men do much of the talking. If we include both male and female in mixed groups, most females will not talk. They will think that they don't need to speak in front of men. They just keep quiet. Some women are different. But like if we need to know the real situation, we do the focus group discussion separately with female, separately with male, and mix this group another time together and do the same discussion. We will compare what's the difference. The same people, we again mixed both groups people and ask the same questions (L15).

Women also face challenges in attending these meetings because their other household responsibilities cannot be neglected or postponed,

It's really a challenge for us to ensure gender participation. In our context, women are more focused on household activities and they don't get a chance in rural areas. Basically, women don't want to leave the home and participate in social discussions. In one case, they have many children. They have to look after their children, their other needs, if they don't work and don't go for work, they won't have money to sustain their livelihoods (L13).

Of course, not all women are the same. There are class differences that play a major role in Nepal (Leduc, 2008). Although this was rarely addressed in the interviews, it was brought up twice in terms of focus group meetings in communities. The interviewees discussed how social and class issues don't allow women and men in lower classes to speak freely, and that the social elites (who are typically also poor, just not of the lowest class/caste) look for their needs first, without much concern for the most marginalized people,

Because some people are higher than others, they are more educated, more exposed. They exercise their political power. They exercise their social power. There is some level of differences in ranks within the community. We cannot avoid this contribution but the problem is they often look for themselves first. So anything coming from outside, it is the outsider that is there and the plan will be developed based on their voices. And also resources are allocated for this plan, including prevention plans, but that doesn't guarantee that those plans which are basically targeted to the most vulnerable, more poor, people who are socially excluded and don't have access to information, resources and access (L7).

You have to facilitate the process otherwise women can't speak loudly in front of those people, so called social elites. And the poorer people are illiterate; they can't go against what the whole group is proposing. So, we have to have a good facilitator to bring up several plans. But prioritization is so important and you have to be very clear on that. Without excluding their demands, we have to prioritize the plans of the most vulnerable and socially excluded... and also we should ensure that the presentation of the voiceless people, most vulnerable poor and women's, they have to be well represented (L7).

The challenges in communication between different social classes make it even more challenging to incorporate gendered perspectives. Although it is challenging, it is

essential that participation by women, and advocates of women's needs are included in the process. Without them, the policies and strategies will continue to be male-biased.

As discussed in the introduction of this chapter, there are two issues that Nepal faces in regards to incorporating gender dimensions of climate change in their adaptation strategies discussed in this chapter. The first is that although women play a key role in adapting to climate change, it tends to add to their burden instead of increasing their importance. The second is that Nepal has some supportive language on women in the NAPA but it seems to lead to little action. The four political struggles described in the previous paragraphs help to explain why these two issues occur in Nepal and define entry points in the decision-making process for intervention so that women's importance increases in developing adaptation strategies.

V. Recommendations

The remainder of this chapter will consist of two types of recommendations, technical and political. During the interviews, the interviewees gave specific technical advice, as well as described the importance of understanding the gender dimensions of technical solutions. This information is summarized here to illustrate how gender differentiated recommendations can be useful and are necessary. The political recommendations seek to provide ideas to make mainstreaming a more effective tool to promote gender equality and social inclusion. It is my hope that these recommendations will be useful to Nepal as they continue forward in their NAPA and LAPA, as well as other countries that are developing their NAPAs to be more gender sensitive.

Some of the main challenges and barriers to gender inclusion are addressed in this chapter, and if these recommendations, technical and political, were taken, a more gender sensitive policy would be created. An ideal policy document that addressed the needs and participation of women would incorporate their needs and their ideas from the formulation to completion of the policy document, and all strategies would either have gender components within them, or they would suggest strategies and programs that were universal and applicable for both women and men, as well as other marginalized groups within the country.

Through a more gender-sensitive NAPA, women could play a greater role in adapting to climate change and their unique talents and socially constructed roles would be used to an advantage in reducing vulnerabilities to climate change. By excluding women's knowledge and their emerging needs in the policy, they are disadvantaged in multiple ways. Firstly, their natural talents and ideas are not incorporated into the policy and are therefore unable to be spread to others in the community and country that could benefit from them. Secondly, without policies and strategies that specifically meet the needs that women have to adapt, their time continues to be constricted by doing tasks that could be made easier through adaptation strategies. Lastly, as women are disadvantaged through the adaptation process, so too are their children in multiple ways. Additionally, as women are often excluded in decision-making processes, it reinforces these ideas for the next generation, who may continue to neglect women's needs and participation in the future. By incorporating gender dimensions and women into adaptation strategies, women's workload and vulnerabilities can be reduced right away, as well as challenging

socially constructed gender roles for future generations. The following recommendations would be helpful to reduce vulnerabilities to climate change that women face as well as create a more equality driven NAPA.

A. Technical Recommendations

Some of the recommendations given during the interviews included specifics strategies; such as water up-lifting and making water taps available so that 4-5 households can share the tap. These types of innovations closely link development strategies with climate adaptation. Many scholars from development and disaster risk reduction fields have stated that stand-alone approaches to adaptation that target very specific climate risks are unlikely to be effective if they do not address the underlying factors related to development that make people vulnerable (Adger & Kelly, 1999; Ayers et al., 2014; Cannon, 2000). Therefore, technical recommendations that seek to reduce women's vulnerabilities to climate change will be closely linked to development activities. One interviewee discussed water availability strategies,

In one or two sites, last year, we pilot[ed] for those sites and we implement[ed] adaptation in two or three sites, and the strategy for the adaptation, in one community, in collaboration with another NGO, we have started water up-lifting, and supply to the houses in the people. Some houses have taps and four to five houses can go there (L16).

This suggestion may be helpful and illustrates advancement in technology. Technology is in big demand, according to the interviews conducted. Many respondents believed that advances in technology would be very useful and they indicated that they needed to share what types of technologies are available with local people, who should have a voice in

choosing technologies that would be useful for them. One interviewee believed that technology would improve the transportation and collection of water, saying,

[What they need are] some technologies or interventions at the ground level. Like if there is drought, they need water. Technology, how they can bring some source of water, how they can bring that water to their places. If there had been rainfall, technology to take care of landslide (L15).

Technology would also be useful in terms of labor for agriculture. Since women make up a lot of the agriculture workers, technologies that women can use and can be used by one or two people would be especially important. This interviewee describes the importance of choosing technology that is appropriate for women,

Now what people need as agriculture production is going down, climate change is adding problems to their lives so like labor person are also going. People working the field; we can't find the labor now. People aren't willing to work in the field. We need the technologies, which will reduce our workload. This is the type of technology we need to invent. [A technology which] can be done with female [or/and] with few people (L15).

It is especially important to concentrate these initiatives towards helping women and asking their opinions about technologies that may be most useful to them. Brody et al. (2008) discusses the importance of understanding technologies specific towards women's needs,

Poor women's priorities regarding energy and technology have not been systematically fielded. As a result, new technologies may be poorly suited to their needs. Moreover, because access to progressive technologies is typically restricted to men, and since it is men who tend to exercise decision-making power over the purchase of technology, women often do not have the opportunities to benefit directly from these types of innovation (Brody et al., 2008, p 19).

Basic improvements of women's technologies, particularly for water and agriculture, are needed to catalyze the conceptual shaping of NAPAs to do more for women.

In order for new technology to be innovative and inclusive, three underlying principles have been identified to guide the elaboration and meeting of sustainable development goals (Leach et al., 2012). These three principles can also be used to guide innovative technology to meet the needs of women when adapting to climate change. The first dimension is the specific direction of change. This means being clear on the particular goals and principles driving policy and innovation. In this case, meeting women's needs would be identified as a goal that would drive the NAPAs and innovation derived from the NAPAs would need to accommodate for women's particular needs. For example, if the technology needed to adapt to climate change is better mechanisms for tilling the soil for agriculture, then the NAPA would need to include women's particular needs in the policy and the innovation would need to ensure that it is meeting women's needs, such as weight and maneuverability so that women could physically use the technology.

The second principle is diversity, which suggests nurturing more diverse approaches and forms of innovation (both social as well as technological), and this will allow them to respond to uncertainty and surprise arising from the complex, interacting biophysical and socio-economic schools and stresses highlighted in different environments. Diversity also provides "a richer resource to foster more robust and resilient innovation pathways into the future" (Leach et al., 2012). Incorporating multiple innovative technologies can allow people to evaluate if some strategies work better than others, or if there are underlying cultural or social processes that are affected by different technologies. Therefore, if one technology does not meet the needs of the community,

then it can easily be switched to other emerging technologies that may be more socially and culturally appropriate.

The third dimension is distribution, which includes the distribution of benefits created by innovation, understanding how the safe operating space is shared between different people, and asking about who gains and who loses from particular policies and innovations. Leach et al., (2012) describes that there are often trade-offs between contrasting environmental and poverty reduction goals, and national or local interests. For example, large-scale irrigated land developments in Africa may contribute to sustainability from the perspective of national food security, increased GDP, and the intensification of productive land use. On the other hand, this phenomenon may be seen as land and water grabs that displace poor rural people and destroy the livelihoods of marginal groups like pastoralists and women farmers (Leach et al., 2012).

Leach et al., (2012), also state that grassroots innovations offer particular value, helping to favor and prioritize more fairly the interest of the most marginal groups. These dimensions highlight the importance of multi-scale approaches, as there are contrasts between top-down and grassroots-led approaches to policy and innovation in different settings. Additionally, women's participation is important at all scales, which is described in the following paragraphs.

Women's input is important for a number of reasons including understanding the gender dimensions of problems in Nepal, as well as having local communities take accountability for their adaptation projects and feeling as if they will truly be useful.

In order to understand the gender dimensions and include women, it is imperative that women attend meetings (Agarwal, 1997), so that they have the ability to be included, “We try our best to get the physical participation of women. We count heads of how many women are there” (L18). Additionally, it is imperative for men to understand that women need to be included, so that they will not speak for them. This comes from education and from working at the household level to get men to understand the importance of women’s views in decision-making. An interviewee discussed the importance of gaining men’s support,

If you want women to talk, then you have to convince their male counterpart that they are important. If you don’t explain this to the men, then they will leave the women at home. First thing, we have to train the counterpart, education is obviously important. Most educated family do not have such discrimination in the house. So if we see from the national level, but at least we have to bring both counterparts and explain that it makes sense to include other members, other excluded women. So [the] first thing, we have to train the counterpart at the same time, and usually when we look at the things, the education, males are better informed than the women (L14).

In addition to obtaining women’s participation in community meetings, the whole community should be involved in projects so that they take accountability for them and become active participants. Since women are in charge of water collection and agriculture, and are often the sole provider due to out-migration, it is imperative that they include and focus some of these community interventions toward women, their needs, and their schedules. The importance of having community intervention in projects coordinated at the national level was illustrated in one of the interview responses,

Like simply going from higher [referring to top-down policy programming] it won't work. In the fields whenever I go, the people won't accept it. They will say that 'this is not our problem. You are always saying that some organization, but it's directly through from outside. You haven't consulted with us.' And we have to convince them. If we implement the program, we should include them, sit with them, plan with them, and include them with every step. Then only they will think that this program is theirs. They will take it in their own way. It will be easy (L15).

The importance of having local community members involved in policy programming is well documented in the sustainable development literature. Jennifer A. Elliot (2006) states that when people have secure gains from investments "it has been found that they also have a perceived self-interest in project development and implementation" (p. 181). Therefore, by involving the community in the development and implementation of adaptation strategies, they will feel as if the project is theirs, take accountability for it, and see it through. It is essential to have community partnerships in adaptation projects, as NGOs and local governments may not be able to watch over the project in the long-term and may leave the area when funding runs out.

The lack of communication and integration of knowledge from communities, policy makers, and researchers to support action is a problem being tackled globally with some progress (Cash et al., 2003; McNie, 2007; Reid et al., 2009). Broad reviews suggest that such efforts are most successful when teams attempt to position people or institutions along the boundaries between communities, policy makers, and researchers. The capacity of such people or institutions to span these boundaries tends to improve the salience, legitimacy, and credibility of the information produced for all involved (Cash et al., 2003). Therefore, it becomes apparent that a combination of people from different sectors coming together to produce information and support action, in combination with multi-

scale top-down and bottom-up approaches will provide a unique and comprehensive approach to addressing the gender dimensions of climate change adaptation.

B. Political Recommendations

As previously discussed, gender mainstreaming is a generally accepted process for promoting gender equality (UN Women; Walby, 2008). Additionally, the UN has mandated that gender mainstreaming cover the whole UN system (UN Gender Mainstreaming, 2002). Therefore, it is important to translate the components of mainstreaming into specific components of climate change adaptation policies. Using mainstreaming as a reference to promoting gender equality in policy processes, the following three areas are identified for improvement within Nepal's NAPA.

i. Priority from donor agencies: From a top-down perspective, it is essential that the international community address gender mainstreaming and equality for women and socially marginalized communities as a priority. Although they've done this by emphasizing mainstreaming and creating policies that state their commitment, it is not followed through in policies like NAPAs. Instead, generalized statements that talk about their commitment without showing results are common. Additionally, donor agencies rarely (if ever) hold decision-making bodies accountable for gender components and leave it up to each country to decide how and if they wish to address gender inequality. Many of these countries have a historical background of excluding women and social minorities, therefore it is challenging for them to understand the importance of gender and create policies and programs that mainstream concepts of gender and social inclusion.

Donor agencies and international organizations that mandate policies from LDCs must provide additional resources for gender mainstreaming as well as make it a priority by allocating funds to address social inequalities (Aguilar, 2010). By doing this, countries will be held accountable and will understand the importance of addressing gender issues and incorporating social inclusion. By neglecting to operationalize statements about the importance of gender and social inclusion, international agencies provide precedence for mentioning gender issues without mainstreaming them into policies and processes.

ii. National priority: From the national perspective, the government should set priorities that mainstream gender into the process, instead of separating it, which leads to a lack of accountability and responsibility for the issues. Nepal's NAPA has identified gender and social inclusion as a crosscutting theme, one of two crosscutting themes, to be included into the six thematic groups of agriculture and food security, climate-induced disaster, urban settlement and infrastructure, public health, forests and biodiversity, and water resources and energy (MoE, 2010). By failing to identify the boundaries of the crosscutting themes, they leave each thematic group to interpret it on their own. This is confusing for the participants in the NAPA process and leads to misinterpretation of how gender should be addressed. Some participants interpret this to mean that they must include gender and social inclusion themselves, while most assume that as a cross-cutting theme, someone else will include these issues for them, or that gender will be given its own section and does not need to be dealt with in the other thematic groups. This confusion has allowed for gender and social inclusion to be sporadically addressed, if at all, and therefore, not mainstreamed.

The national government should establish a cohesive plan that illustrates how gender and social inclusion will be addressed and by whom. Ideas of gender should be discussed among all thematic groups and a contact person should be made available to address any gender and social inclusion questions that thematic facilitators have. Whether the national objective is to allow each TWG to include gender on their own or to assign gender its own thematic group, each sector must be held accountable for understanding the gender and social inclusion aspects of their thematic area. This commitment to gender equality should be included in national planning and decision-making, and mainstreamed into all national policies. This would set precedence for all further planning and policies to consider gender and women's needs.

As briefly mentioned above, a gender facilitator should be named at the beginning of the process to identify priority areas for the policy as well as to hold accountability for mainstreaming gender and social inclusion. Evidenced by the Rio Earth Summit and The United Nations Commission on Sustainable Development, it does make a difference when women's representatives and gender experts stand up for women's rights and gender considerations (Hemmati & Rohr, 2013). A facilitator for gender in the NAPA can serve as a focal person so that anyone involved in the process can communicate with him or her in regards to the crosscutting theme. As each sector has a specialty, and therefore not everyone has time to fully understand complex gender dynamics, it is essential that a focal person be made available should anyone need more information. By not identifying a focal person for gender from the beginning of the process, mainstreaming has been sporadic and only discussed by those with a particular and

previous interest in gender inequalities. A gender focal person should also have the ability to attend meetings at all levels and follow the NAPA process from beginning to end.

In terms of participation by and for women, it is important to note that equal participation in terms of numbers does not automatically guarantee representation of women's needs. It can be argued that it is much more important to include a gender expert into projects than equal participation by women (Rohr, 2007), but it should at least be just as important to have both women as individuals represent themselves, and a gender expert to represent women's needs.

iii. Implementation of policy: From the implementation standpoint, it is critical that a network for further communication among national, regional, and community levels be organized. LAPA is often considered the implementation document of the NAPA, applying policies and programs established at the national level to the local level. Therefore, it is essential that decision-makers at the national level be included, consulted, and available for implementation processes. By providing local implementers clear access to the specific individuals involved in different parts of the policy, they will have an easier time operationalizing ideas that were created at a national scale for local application. Additionally, having a gender focal person at the national level will ensure that the LAPA implementation process will be more gender sensitive and that gender will be mainstreamed throughout the process. The gender focal person will also be there to oversee that the issues and programs developed at the national level are addressing gender and social inclusion in local communities. This is essential as the focal person will

have a greater connection with the international community and can learn from successes and failures of other countries in terms of gender and social inclusion and translate these into national policies and local level applications (Watts, 2009).

VI. Synthesis

While there is considerable room for improvement in Nepal's NAPA with regards to promoting gender equality and reducing women's vulnerabilities to climate change, there is an effort made to understanding these gender dimensions and to improving women's adaptive capacity through adaptation projects. Despite little mention of women and gender within the project proposals in the NAPA, there is evidence that the implementers of these projects are incorporating women's needs as the projects are being employed at the local and community levels. Climate change adaptation projects, as well as all development style projects, have the ability to reduce gender inequalities while addressing the main purpose of the improvement activity. Additionally, national policies have the ability to highlight that gender can be incorporated into policies that are not aimed directly at reducing inequalities, but can be done simultaneously.

This study of Nepal's NAPA reveals gender sensitivity in the following ways: a) changes in climate could have gender-specific implications whereby it voices the concern that women are more vulnerable to changing climate than men; b) Since the majority of women are largely engaged in climate sensitive sectors, changes in climate will most likely have adverse effects on the lives and livelihoods of women; and c) a clear description of the gender dimensions of climate change adaptation strategies. Despite a

clear articulation of the need for gender sensitivity in climate adaptation policy, this analysis also reveals weak links between UN gender initiatives and the NAPA.

This chapter addresses the main vulnerabilities women face in rural Nepal to climate change and addresses the issues within the policy-making process that hinder mainstreaming to be an effective tool in incorporating women and promoting equality. Two puzzles stem from the analysis of Nepal's NAPA. The first being that women in Nepal play a key role in adapting to climate change but it adds to their burden rather than increasing their importance. Secondly, Nepal's NAPA has some supportive language on women, but it seems to lead to little action. The four major components of the policy-making process that need to be improved are the sectoral biases, lack of mainstreaming, lack of communication, and inadequate participation and representation of women, which give some insight as to why gender isn't being addressed adequately. The four political process problems are discussed in detail in this chapter and were identified during the interviews that were conducted in Nepal with national and local level participants in the development of Nepal's NAPA. Recommendations were also provided in this chapter to address the physical vulnerabilities that women have to climate change in Nepal, as well as recommendations to the vulnerabilities exacerbated by the male-dominated policy-process.

One of my focuses in this dissertation is to assess the relevance of policies mandated by the UN. As an international organization, the UN has continued to put forward policies for nation-states around the world with the hope of translating universal values based on their perceived need. In this dissertation, I have focused on the UN's call

for mainstreaming gender within all activities, policies, legislation, and programs. I was fascinated by the strong language and sincere commitment that is implied in the gender mainstreaming guidelines provided by the UN and I wanted to assess how and if this has been considered in the NAPAs. Additionally, I have accepted the notion of gender mainstreaming as the best approach to promote gender equality, with being fully cognizant that the reality may be different.

There is an existing scholarly debate surrounding the problem of legitimacy and accountability in global governance, which focuses on the growing power of international institutions. Scholars have begun to examine more closely the autonomous power and authority wielded by international organizations (Barnett and Finnemore, 2005). As international institutions have acquired new responsibilities to manage global economic processes, a growing disjuncture has opened between their power to shape world order and their lack of legitimacy in the eyes of skeptical publics (Miller, 2007). In this case, the UN has the authority to mandate climate change adaptation strategies and have provided LDCs with requirements and a general outline of what their NAPAs should include and address. These top-down organization methods allow for NAPAs to be comparable between LDCs, include information that is deemed necessary by the UN, and provides a pathway in which to receive funding for the policy implementation efforts through the international organization. For these reasons, especially in terms of providing funding, the UN holds tremendous power over LDCs. While this UN process provides input for LDCs that may not have the resources to acquire them on their own, and provides LDCs with benchmarks in which to build their NAPAs, each LDC is socially,

cultural, politically, and economically different. Each LDC will also experience different impacts from climate change and the top-down approach from the UN may not give each country the leeway to develop and implement adaptation strategies that would most benefit each individual country.

Furthermore, the UN's commitment to gender mainstreaming is also criticized. Charlesworth (2005) questions the bland, bureaucratic acceptance of the method of gender mainstreaming in international institutions and suggests that it detracts attention from the ways that sexed and gendered inequalities are woven into the international system. Krook and True (2002) identifies gender mainstreaming as a norm, and states that norms which spread across the international system tend to be vague, enabling their content to be filled in many ways and thereby are appropriated for a variety of different purposes. Their argument is that norms diffuse because they may encompass different meanings, fit in with a variety of contests, and be subject to framing by diverse actors.

Gender is also not easily translated into other languages or technical concepts. An example from a UN Food and Agriculture Organization project in sub-Saharan Africa shows that the interpretation of gender mainstreaming varied greatly among the stakeholders of the project and became radically simplified. In the field, it consisted of little more than a collection of information on the numbers of women involved in fish farming and the goal of including more women, without any effort to revise technical plans. Additionally, local project workers could not understand the pressure to include women in farming projects and resented it as irrelevant and inconvenient (Harrison, 1997).

The gap between policy and practice is highlighted in the Secretary-General's 2004 review of the 1997 ECOSOC document concerning gender mainstreaming in the UN. While the review gave a generally positive report, the review noted the strong gap between policy and practice. The review observed that areas of UN work, such as poverty eradication, macro-economic development, energy, sanitation, infrastructure, rural development, and peace and security has not yet integrated a gender perspective (UN ESCOR, 2004). I assumed that this gap between policy and practice would reduce over time, but evidence from my research found the same gap to be apparent in the NAPA documents.

Within my analysis, I found that no guidelines were provided from the UN to LDCs in regards to gender mainstreaming. Additionally, there was no evidence that any UN agencies had prepared or analyzed specific ways to mainstream gender within climate change adaptation policies or strategies. This disconnect between gender mainstreaming initiatives at the UN level and national planning could have been addressed by actively engaging a gender specialist within the LDCs NAPA development processes or by providing written material that specifically focuses on gender mainstreaming and adaptation.

I also found a neglect of gender mainstreaming from UN offices located in Nepal. During my interviews, I communicated with individuals at Nepal's UNDP office and found that they failed to provide sufficient gender input at the beginning phases of NAPA development in the country. Furthermore, I also encountered NAPA decision-makers who were hesitant to discuss gender issues when they were more concerned with issues

that confronted all populations in the country, such as economics, funding, and ensuring basic necessities were met among poverty stricken communities. These decision-makers were confused on why I was discussing gender when more pressing issues were in need of attention. What is interesting is the vibrant civil society of Nepal, which highlighted gender and social inclusion as a crosscutting theme in the NAPA. As a result, it has been filtered into other adaptation levels and provides a basic starting point in addressing gender within country specific policies, even though it did not originate from the UN.

Further effort is needed by the UN in regards to gender mainstreaming, and in order to be taken seriously, gender mainstreaming requires priority in planning, partnership between the UN and local groups, secure and adequate provision of resources, and an understanding that gender issues are as much about men as about women (Charlesworth, 2005).

The UN is an established international organization that will continue to be in place for the foreseeable future. The NAPA, which is conceptually structured by the UN and mandated for LDCs, is the most organized way to reduce vulnerabilities to climate change and help these countries adapt. Furthermore, gender mainstreaming is the approach in which the UN has chosen to attempt to reduce vulnerability of women from climate variability and change. The UN formally committed to this approach in 1997, almost 20 years ago, with no visible signs of any shift or change to a different approach. While my dissertation highlights the gap between policy and practice, my recommendations provide valuable contributions for promoting gender mainstreaming in NAPAs.

CHAPTER 7

CONCLUSIONS AND MOVING FORWARD

As climate change continues to threaten livelihoods in developing countries, adaptations strategies are emerging as the most promising way to cope with these changes. Class, race, ethnicity, wealth and gender will differently distribute the effects of climate change (Cutter, 2010). My dissertation looks specifically at gender and how climate change will impact women and men differently in many LDCs and how these differentiated impacts are addressed in climate change adaptation policies. In order to do this, NAPAs are assessed.

NAPAs are adaptation policies developed in each country to respond to the urgent and immediate needs to adapt to climate change impacts. NAPAs were presented at the 6th COP in 2000 and reestablished at the Marrakesh Accords of 2001. The first NAPAs were submitted to the UNFCCC in 2004, and the most recent in 2013 (UNFCCC NAPA). There have been a total of 49 NAPAs from different countries and my dissertation specifically looks at how gender mainstreaming has been applied at different phases of the development and implementation processes of all 49 NAPAs.

Since 1997, the UN has been formally committed to gender mainstreaming in all policies and programs as a means to achieve the goal of gender equality. Mainstreaming involves ensuring that gender perspectives and attention to the goal of gender equality are central to all activities, including policy development, research, legislation, and resource allocation. Mainstreaming also entails incorporating gender perspectives at the planning, implementation, and monitoring phases of all programs and projects (UN Gender

Mainstreaming, 2002). Given that this has been a UN goal for almost 20 years, NAPAs should reflect a sincere commitment to gender mainstreaming, and I try to assess to what degree this has been achieved, if at all. Mainstreaming is particularly important as it can increase the efficiency of responses to climate change, however, if not applied, it can actually hinder progress toward gender equality (Klein et al., 2003).

Two threads guide the theoretical foundation of my dissertation. One is the emerging and growing literature from vulnerability analysis (Ribot, 2009). The second is a more established literature from feminist studies (Shiva, 1988; Dankelman, 2010). The thought process for my dissertation uses a merger of two approaches found in the vulnerability literature and also incorporates a feminist perspective to understand how and why women are vulnerable to climate change impacts. The two vulnerability frameworks consist of a risk hazards approach and an entitlements and livelihoods approach (Ribot, 2009). The risk hazards approach looks at one event and its multiple outcomes. The entitlements and livelihoods approach looks at the causal factors that make individuals have differentiated responses to climate change. By merging these two approaches, I take a more holistic view of what the causal factors are that make people vulnerable. By viewing these dimensions through a gender lens, I get a better understanding of how these differentiate between men and women.

My dissertation looks at gender sensitivity of the NAPA at three levels, which are organized into three research chapters. The first level has the broadest scope of research, and is an analysis of all 49 NAPAs. Located in Chapter Four, this analysis provides a general overview of the documents in order to grasp the overall essence of the NAPAs.

The second level, found in Chapter Five, focuses more closely on four countries so that I am able to explore social, cultural, and political contexts by looking at academic resources other than the NAPA documents. Level three of this analysis, found in Chapter Six, is the most specific, and consists of a case study of Nepal's NAPA and their decision-making processes.

The first level of this analysis, found in Chapter Four, consists of a content analysis of all 49 NAPAs. The main content of all NAPAs is a list of ranked adaptation projects with short profiles explaining the projects. I read through all of the NAPAs and highlighted areas with specific mention of women or gender. I coded these into three categories: women's vulnerabilities, gender equality programming, and participation. Women's vulnerabilities are further coded into four subcategories: agriculture and food, economy and labor, health, and water. Gender equality programming refers to measures taken within the NAPA to specifically reduce women's vulnerabilities, and the subcategories consist of general statements that the NAPA makes concerning women, projects that specifically target women's needs, and if women's empowerment is listed as a priority project selection criterion. Lastly, participation is separated into three subcategories: participation by women as individuals, participation by women's organizations, and participation by representatives of women, which includes gender specialists and task force participants. The findings from this analysis are organized into one synthesizing table, while detailed descriptions of each category and subcategory are found in additional tables. I also listed the countries in the synthesizing table by region

and chronologically, as I originally assumed that gender mainstreaming would vary geographically or have improved over time, although I did not find this to be the case.

What I did find is that over half of the NAPAs include a general statement that addresses that women will be impacted by climate change differently than men. Also, over half of the countries include women's empowerment as a priority project selection criterion. This illustrates that these countries understand that gender issues are significant, but what is surprising is that out of the 557 projects presented in all 49 NAPAs, only 10% mention women or gender at all, and only 5 project specifically target women. This is particularly problematic as any funding for NAPA implementation efforts will be directly related to specific projects, and if they do not incorporate ideas that will help women adapt, then implementation projects will continue to be male biased.

Additionally, I was able to highlight three NAPAs that have the most significant contribution toward gender equality out of my assessed categories. These countries are Somalia, with 7 out of 10 assessed categories, Nepal, with 8 out of 10, and Solomon Islands, with 6 out of 10. All three of these countries submitted their NAPAs more recently, however I was not able to identify any specific patterns, as other NAPAs submitted at the same time did not reflect the same level of gender sensitivity. I also found that there were not any NAPAs that address gender in all of the categories that I assessed. Seven NAPAs are completely gender blind, with no mention of women or gender at all. These NAPAs vary in date submitted and region, and therefore, I was not able to identify any patterns as to why this might be the case.

For my second level of analysis, found in Chapter Five, I assessed country specific contexts that influence the gender sensitivity of the NAPA. Given that NAPAs are only written policy documents, my level one analysis may not necessarily reflect how implementation efforts will be carried out, and also may not reflect the overall commitment of gender equality in each country. Therefore, this level of analysis focuses on only a few countries, their NAPAs, and the social and cultural contexts that may give more insight into the overall gender sensitivity of adaptation efforts. I chose Afghanistan, Bangladesh, Maldives and Niger. I selected countries from the three geographic regions that LDCs are divided by. These countries also have contrasting biophysical features, with Afghanistan and Niger being landlocked, Bangladesh as a coastal country, and the Maldives as an island nation. Additionally, these countries also vary widely in how they address gender according to the categories assessed in the level one analysis.

Afghanistan's situation is unique, as their historical gender inequalities make it challenging for gender to be addressed at all in the NAPA. Given this, it is unique in that the NAPA specifically discusses the challenges to incorporating gender. This is the only NAPA that discusses cultural constraints to women's inclusion. Their NAPA also highlights how the extremely weak position of women in society can impact adaptation to climate change if left without intervention.

Maldives also provides an interesting case because there is no mention of women or gender in any of the assessed categories or subcategories from my level one analysis. After I noticed the lack of gender inclusion in the NAPA, I assumed that there were not any gender based climate change vulnerabilities, but in fact there are many. Women are

primary collectors of fresh water, which is being extremely impacted by climate change. Secondly, men are primary earners of household income, which leaves little wage-labor for women. Therefore, women are less likely to have a financial safety net to adapt to climate change. This demonstrates that Maldives' NAPA should address women's vulnerabilities, given their weak position in society.

More specifically, level three of my analysis consist of a case study of Nepal's NAPA, which includes an analysis of the development and implementation phases of the adaptation programs. Methodologically, I analyzed the complete NAPA document and supplemented the findings with interviews conducted in Nepal with decision-makers and people involved in the national and local adaptation processes.

One of the main components of the level three analyses is the comparison of the gender specific vulnerabilities that were outlined in the NAPA with the proposed projects that were presented. Four categories were analyzed: agriculture, water, disasters, and health. The findings suggest that very few projects specifically mention women or gender, and therefore, the ability of these projects to address women's needs are left up to implementers, their abilities, and their discretion.

Through my analysis of Nepal's NAPA, as well as through the interview responses, I identified areas in the NAPA process that have prohibited gender mainstreaming and continue to make the process male biased. One of these areas is that sectoral interests guide the NAPA. Nepal's NAPA is made up of six thematic areas and two crosscutting themes. Each thematic area is given to its department counterpart and that section of the NAPA is developed and written by them. Gender and social inclusion

is identified as a crosscutting theme, and therefore was not the sole responsibility of any ministry or department. By setting gender and social inclusion apart in this way, and not identifying who should address it, it was never fully addressed and was not mainstreamed into the six thematic areas.

Secondly, the NAPA treated gender as an end component, which means that it was not discussed throughout the NAPA development process but was instead given some attention after the document had already been drafted. Nepal hired a gender specialist to assess the document and create a report that highlights women's vulnerabilities. A table of the gender specialist's ideas is presented as an annex to the NAPA. The gender specialist described to me that she was not able to mainstream any of that information into the other sections of the NAPA, and that when she discussed the gender components with some of the thematic working groups, they told her that she should include them in the gender and social inclusion section, which was never actually a separate section within the NAPA.

Level three of this analysis also includes recommendations for reducing women's vulnerabilities in political process and in technology based adaptation strategies. Additionally, the legitimacy of the UN and the concept of gender mainstreaming are discussed.

Since the UN mandates NAPAs, and the UN has been formally committed to gender mainstreaming since 1997, NAPAs should reflect a sincere commitment toward gender equality and this should be reflected in each of the policy documents. As my research suggests, there is a lack of gender mainstreaming at all levels and phases of

adaptation policy. One of the goals of my research is to identify recommendations that would aid in mainstreaming gender into climate change adaptation strategies. From a top-down perspective, it is essential that the international community further encourage gender mainstreaming. This could be achieved by providing funding for mainstreaming gender as well as providing further resources by way of gender specialists. Additionally, providing detailed gender mainstreaming guidelines that specifically address adaptation would be beneficial.

Secondly, from the national perspective, it is essential that each country make a sincere commitment toward gender mainstreaming. Nepal's NAPA includes a cross-cutting theme of gender and social inclusion but this was never explained to the policy developers, so gender is discussed sparingly and it actually caused confusion on how and where gender should be addressed. Laying guidelines for gender mainstreaming in the NAPA at the national level would have been beneficial to those that were developing the policy and implementing the strategies outlined within it.

Moving forward with this research, it would be advantageous to conduct interviews with individuals from the UN system. I believe they would provide valuable insights into understanding how the international organization plans to continue making progress toward gender equality. UN officials would also be able to provide information on how they best suggest gender mainstreaming be applied and if this is a process that they plan to continue in the future.

Additionally, as with any interdisciplinary research, there are challenges to merging feminist perspectives with vulnerability and adaptive capacity literatures in

policy discussions. My research fills a gap within these three, and it is my hope that further studies will continue to merge these dialogues. In conclusion, as climate change continues to pose serious threats towards livelihoods in developing countries, it is essential that women's needs be addressed by adaptation strategies. Hopefully my research will aid in the ongoing dialogue to build strategies that better meet the needs of the most vulnerable communities.

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APPENDIX A
LIST OF LEADING AUTHORS OF NAPAS

Country	Leading Author	Page #
Afghanistan	National Environmental Protection Agency, Afghanistan	123
Angola	Ministry of the Environment	91
Bangladesh	Ministry of Environment and Forest	46
Benin	Ministry of Environment	81
Bhutan	National Environment Commission	82
Burkina Faso	Ministry of Environment	76
Burundi	Ministry for Land Management, Tourism and Environment	85
Cambodia	Ministry of Environment	115
Cape Verde	Ministry of Environment and Agriculture	34
Central African Republic	Ministry of Water, Forest, Hunting and Fishing	67
Chad	Ministry of the Environment	92
Comoros	Ministry of Rural Development, Fisheries, Handicraft and Environment	91
Congo	Ministry of Environment	94
Djibouti	Ministry of Housing, Urban Planning, Environment and Spatial Planning	83
Eritrea	Ministry of Land, Water and Environment	41
Gambia	Department of State for Forestry & the Environment	97
Guinea	Ministry of Agriculture, for Livestock, Environment, Water and Forests	118
Guinea-Bissau	Ministry of Natural Resources and Environment	89
Haiti	Ministry of Environment	61
Kiribati	Ministry of Environment, Land, and Agricultural Development	63
Lao	Ministry of Agriculture and Forestry	104
Lesotho	Ministry of Natural Resources	47
Liberia	Environmental Protection Agency	25
Madagascar	Ministry of Environment, Water and Forests	69
Malawi	Ministry of Mines, Natural Resources and Environment	45
Maldives	Ministry of Environment, Energy and Water	98
Mali	Ministry of Ecology, Sustainable Development, and Energy	100
Mauritania	Ministry of Rural Development and of Environment	78
Mozambique	Ministry for the Co-Ordination of Environmental Affairs	62
Myanmar	Ministry of Environmental Conservation and Forestry	126
Nepal	Ministry of Environment	77
Niger	National Council of Environment for Sustainable Development	83
Rwanda	Ministry of Lands, Environment, Forestry, Water and Mines	84
Samoa	Ministry of Natural Resources, Environment and Meteorology	66
Sao Tome and Principe	Ministry of Environment and Natural Resources	74
Senegal	Ministry of Environment	84
Sierra Leone	Ministry of Transport and Aviation	108
Solomon Islands	Ministry of Environment, Conservation and Meteorology	136
Somalia	Ministry of National Resources	93
Sudan	Ministry of Environment and Physical Development	51
Tanzania	Division for Environment	52
Timor-Leste	Ministry for Economy and Development	108
Togo	Ministry of Environment, Water and Forests	113
Tuvalu	Ministry of Natural Resources, Environment, Agriculture, and Lands	55
Uganda	Ministry of Water, Lands and Environment	73
Vanuatu	National Advisory Committee on Climate Change	56
Yemen	Environmental Protection Agency	63
Zambia	Ministry of Tourism, Environment and Natural Resources	59

Table 4.1: Leading author of NAPAs and page count

APPENDIX B

INTERVIEW QUESTIONS

Informal Interview Questions:

General NAPA questions

1. Nepal's National Adaptation Plan of Action (NAPA) is considered to be innovative and comprehensive. How do you see the scope of the NAPAs when it comes to implementing while being true to its thrust?
2. IS the country currently implementing the programs outlined in the NAPA?
3. If so, can you tell me some of those programs already under implementation?

Gender Inclusion (National)

4. I understand that Nepal has illustrated a dedication to incorporating women and other marginalized people into the NAPA projects. What was the process like for including women into the development process of the NAPA?
5. Were there any specific directives provided by UNFCCC to encourage gender inclusion in the NAPA?
6. Do you think the tools provided by UNFCCC were useful? Did you also use other tools to encourage inclusion of women and marginalized people into the development process?
7. Not all women are marginalized women. Some women represent communities of different classes. How did you make sure that marginalized, as well as non-marginalized women, were included?
8. Some NAPA activities relate specifically to women and the roles that they typically have in different cultures and societies. Which NAPA activities in Nepal are particularly reflective of women's interests and needs?
9. Many people are so busy in their daily lives that they are unable to participate in policy processes. Were incentives given to marginalized women in order to encourage them to participate in the NAPA development process?

Gender Related Tools/Personal Reflections (Local)

10. Can you remember an incident during the NAPA development process where you felt that gender should be addressed but was sidelined or marginalized?
11. Can you remember an incident during the NAPA development process where you felt that gender was addressed in the best possible way and that the outcomes from the projects would help women?
12. There has been a large emphasis to incorporate women from marginalized communities. Do you think that input from marginalized women is helpful in order to make policies and strategies aimed to help them?
13. Can you think of a specific instance where a contribution from a marginalized women was helpful in identifying an area that needed strategic assistance?
14. In the future, what do you think is the best way to ensure that NAPAs are meeting the needs of women who need assistance in adapting to climate change?

General LAPA questions

1. Nepal's Local Adaptation Plans of Action (LAPAs) are considered to be innovative and comprehensive. How do you see the scope of the LAPAs when it comes to implementing while being true to its thrust?
2. Is the community currently implementing the programs outlined in the LAPA?
3. If so, can you tell me some of those programs already under implementation?

Gender Impacts/Inclusion

4. I understand that Nepal has illustrated a dedication to incorporating women and other marginalized people into adaptation projects. What was the process like for including women into the development process of the LAPA?
5. Were there any specific directives provided by UNFCCC or the NAPA to encourage gender inclusion in the LAPA?
6. What tools did you use to encourage inclusion of women and marginalized people into the development process?
7. Not all women are marginalized women. Some women represent communities of different classes. How did you make sure that marginalized, as well as non-marginalized women, were included?
8. Some women have different jobs and household tasks than men. Do women and men in Nepal traditionally have different roles in society and in the household?
9. Do these jobs rely heavily on natural resources or environmental conditions?
10. If yes, then how would climate change and environmental changes affect women in different ways than men?
11. Some LAPA activities relate specifically to women and the roles that they typically have in different cultures and societies. Which LAPA activities, in the community in which you work, are particularly reflective of women's interests and needs?
12. Many people are so busy in their daily lives that they are unable to participate in policy processes. Were incentives given to marginalized women in order to encourage them to participate in the LAPA development process?

Gender Related Tools/Personal Reflections

13. Can you remember an incident during the LAPA development process where you felt that gender should be addressed but was sidelined or marginalized?
14. Can you remember an incident during the LAPA development process where you felt that gender was addressed in the best possible way and that the outcomes from the projects would help women?
15. There has been a large emphasis to incorporate women from marginalized communities. Do you think that input from marginalized women is helpful in order to make policies and strategies aimed to help them?
16. Can you think of a specific instance where a contribution from a marginalized women was helpful in identifying an area that needed strategic assistance?
17. Are there any people or agencies that particularly didn't focus on gender issues?
18. In the future, what do you think is the best way to ensure that LAPAs are meeting the needs of women who need assistance in adapting to climate change?
19. As NAPAs and LAPAs ideally would work together to provide adaptation assistance, what do you think is the best way to ensure that NAPAs are meeting the needs of women who need assistance in adapting to climate change?

APPENDIX C

NEPAL NAPA GENDER TABLE

Annex 5: Gender sensitivity analysis of climate change impacts

Water & Energy	Agriculture & Food Security	Forestry & Biodiversity	Urban Settlements	Public Health	Climate Induced Disasters
Decreased women's access to water resources increases work load, impacting on reproductive health (e.g. prolapsed uterus) and personal hygiene.	Male out-migration imposes additional work load on women.	Reduced availability of income generating forest products affects women and marginal communities directly because of their high level of reliance on such products for revenue generation and as safety nets.	Water scarcity would mean that women have to spend more time collecting water.	Due to socially constructed multiple roles, more women than men die or get injured from climate change related health hazards.	Women have less access to early warning and climate information and generally, lack the skills to survive extreme events.
Climate induced resource conflicts increases social violence, anxiety and depression in women.	Women consume less food during shortages causing under-nourishment and weakness- especially during pregnancy and lactation.	Women and marginalized groups have limited access to new information and communications to support adaptation.	Migration and frequent movements due to temporary displacement related to flash floods pose risks of insecurity and sexual violence against women.	Climate change exacerbates gender differentiation and poor health of women.	Women face the risk of increased sexual violence in temporary shelters.
Women are often the household members who look after water, firewood, and energy management. Any risk involving them should be addressed in climate adaptation strategies.	Women are custodians of local knowledge, agricultural skills and practices (e.g. seed preservation) and other livelihood related activities. Loss of these resources due to climate change would make women more vulnerable. Adaptation strategies need to improve women's access to these resources.	Climate induced resource use conflict amplifies existing gender inequalities. Women become more vulnerable when conflict leads to social violence, anxiety, and depression.	Inadequate incorporation of gender concerns in urban planning and policies undermines adaptation.	Women bear the brunt of providing increased care of vulnerable children, sick, disabled, and old age people.	Cultural and social restrictions curtail mobility of women and their ability to avoid disasters.
	Due to limited access to credit, market, land, and agricultural extension services, women are more vulnerable to adverse climate change impacts.		Under representation of women and marginal communities in urban projects and infrastructure development. Women are to be important actors in the development of urban adaptation.	Climate change-induced diseases, such as respiratory disorders, allergy, asthma and other respiratory diseases appear more among women, marginal people including children. This leads to women's illness, physical and mental stress.	Women and marginalized people are poorly represented in formulating disaster related policies and programme. In case of food scarcity, women often eat less and also become less careful about their health also makes them to become more prone to malnutrition and diseases.